



**ASIIN Seal**

## **Accreditation Report**

**Bachelor's Degree Programmes**

*Computer Engineering*

*Computer Science*

*Device Engineering*

*Information Security*

*Information Technologies,*

*Mechatronics and Robotics Engineering*

Provided by

**Western Caspian University, Baku**

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## A Accreditation Status

### Result Overview

The most recent decision for the ASIIN Seal was made by the ASIIN Accreditation Commission on 27.03.2026.

| Degree Programmes                              | ASIIN Seal                   | Accredited by German Engineers | Validity                |
|------------------------------------------------|------------------------------|--------------------------------|-------------------------|
| Bachelor Computer Engineering                  | Accredited with requirements | -                              | 27.03.2026 - 22.04.2027 |
| Bachelor Computer Science                      | Accredited with requirements | -                              | 27.03.2026 - 22.04.2027 |
| Bachelor Device Engineering                    | Accredited with requirements | Accredited with requirements   | 27.03.2026 - 22.04.2027 |
| Bachelor Information Security                  | Accredited with requirements | -                              | 27.03.2026 - 22.04.2027 |
| Bachelor Information Technology                | Accredited with requirements | -                              | 27.03.2026 - 22.04.2027 |
| Bachelor Mechatronics and Robotics Engineering | Accredited with requirements | Accredited with requirements   | 27.03.2026 - 22.04.2027 |

### Requirements

#### For all degree programmes

- A 1. (ASIIN 1.3, 2) Increase the scope and scientific demand of the final project to verify that students are able to collect, interpret, and critically evaluate information, to work independently on a scientific question from the respective field, using scientific methods.
- A 2. (ASIIN 1.5) Verify the students' total workload and award the ECTS points accordingly.
- A 3. (ASIIN 4.1) Update the module descriptions with respect to the students' total workload and the awarded ECTS points.

- A 4. (ASIIN 5) Improve the internal quality assurance system and redesign the students' satisfaction questionnaires and the respective reports.

**For the Mechatronics and Robotics Engineering programme**

- A 5. (ASIIN 1.3) Include basic courses in mechanical, electrical engineering, and control engineering as well as a course on electric machines/drives in the curriculum.

**Recommendations**

**For all degree programmes**

- E 1. (ASIIN 1.3) It is recommended to introduce all students to research methods and good scientific practise before they start with the final project.
- E 2. (ASIIN 1.3) It is recommended to give the teachers more flexibility in introducing new courses or adjusting the course content especially in fast developing areas such as computer sciences and information technology.
- E 3. (ASIIN 1.3) It is recommended to further promote students' and teachers' academic mobility and to give teachers the opportunity to take a sabbatical.
- E 4. (ASIIN 4.1) It is recommended to revise the course learning outcomes and to base them on an internationally accepted taxonomy like Bloom's Taxonomy.
- E 5. (ASIIN 4.3) It is recommended to provide open Wi-Fi access for students at all facilities at WCU.
- E 6. (ASIIN 5) It is recommended to make the internal quality processes transparent to all stakeholders and document how students' feedback is handled and how improvements and changes are initiated and implemented.

**For the Device Engineering and Mechatronics and Robotics Engineering programmes**

- E 7. (ASIIN 1.4) It is recommended to significantly increase the number of new students.

## B About the Accreditation Process

| Name of the degree programme (in original language)                                                                                                                                                                                                                                                                                                                                                                        | (Official) English translation of the name     | Labels applied for <sup>1</sup> | Previous accreditation (issuing agency, validity) | Involved Technical Committees (TC) <sup>2</sup> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|---------------------------------|---------------------------------------------------|-------------------------------------------------|
| İnformasiya təhlükəsizliyi, bakalavriat səviyyəsi                                                                                                                                                                                                                                                                                                                                                                          | Bachelor Information Security                  | ASIIN                           | -                                                 | 02, 04                                          |
| Cihaz mühəndisliyi, bakalavriat səviyyəsi                                                                                                                                                                                                                                                                                                                                                                                  | Bachelor Device Engineering                    | ASIIN                           | -                                                 | 02                                              |
| Kompüter mühəndisliyi, bakalavriat səviyyəsi                                                                                                                                                                                                                                                                                                                                                                               | Bachelor Computer Engineering                  | ASIIN                           | -                                                 | 04                                              |
| İnformasiya texnologiyaları, bakalavriat səviyyəsi                                                                                                                                                                                                                                                                                                                                                                         | Bachelor Information Technology                | ASIIN                           | -                                                 | 02, 04                                          |
| Kompüter elmləri, bakalavriat səviyyəsi                                                                                                                                                                                                                                                                                                                                                                                    | Bachelor Computer Science                      | ASIIN                           | -                                                 | 04                                              |
| Mexatronika və robototexnika mühəndisliyi, bakalavriat səviyyəsi                                                                                                                                                                                                                                                                                                                                                           | Bachelor Mechatronics and Robotics Engineering | ASIIN                           | -                                                 | 02                                              |
| <b>Date of the contract:</b> 10.03.2025<br><b>Submission of the final version of the self-assessment report:</b> 01.09.2025<br><b>Date of the audit:</b> 2.12. – 4.12.2025                                                                                                                                                                                                                                                 |                                                |                                 |                                                   |                                                 |
| <b>Expert panel:</b><br>Prof. Dr. Bettina Harriehausen-Mühlbauer, University of Applied Sciences Darmstadt<br>Prof. Dr. Helena Szczerbicka, Leibniz Universität Hannover<br>Prof. Dr.-Ing. Christoph Rappl, University of Applied Sciences Deggendorf<br>Dr. Harry Schilling, BavarianOptics GmbH<br>Shamil Ahmadov, M.Sc., Azerbaijan State Oil and Industry University<br>Aysel Rahimli, Student, Baku Higher Oil School |                                                |                                 |                                                   |                                                 |

<sup>1</sup> ASIIN Seal for degree programmes;

<sup>2</sup> TC: Technical Committee for the following subject areas: TC 02 – Electrical Engineering/Information Technology, TC 04 – Informatics/Computer Science

|                                                                                                                                                                                                                                                                                                                                                                                 |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Representative of the ASIIN headquarter:</b><br><br>Rainer Arnold                                                                                                                                                                                                                                                                                                            |  |
| <b>Responsible decision-making committee:</b><br><br>Accreditation Commission                                                                                                                                                                                                                                                                                                   |  |
| <b>Criteria used:</b><br><br>European Standards and Guidelines as of 15.05.2015<br><br>ASIIN General Criteria as of 28.03.2014<br><br>Subject-Specific Criteria of Technical Committee 02 – Electrical Engineering/Information Technology as of December 9, 2011<br><br>Subject-Specific Criteria of Technical Committee 04 – Informatics/Computer Science as of March 29, 2018 |  |

## C Characteristics of the Degree Programmes

| a) Name                                                    | Final degree (original)                                          | b) Areas of Specialization | c) Corresponding level of the EQF <sup>3</sup> | d) Mode of Study             | e) Double / Joint Degree | f) Duration              | g) Credit points/unit | h) Intake rhythm & First time of offer |
|------------------------------------------------------------|------------------------------------------------------------------|----------------------------|------------------------------------------------|------------------------------|--------------------------|--------------------------|-----------------------|----------------------------------------|
| Bachelor's Degree in Information Security                  | İnformasiya təhlükəsizliyi, bakalavriat səviyyəsi                | -                          | 6                                              | Full time / part time (dual) | no                       | 8 semester / 10 semester | 240 ECTS              | annually / Fall Semester 2020          |
| Bachelor's Degree in Device Engineering                    | Cihaz mühəndisliyi, bakalavriat səviyyəsi                        | -                          | 6                                              | Full time                    | no                       | 8 semester               | 240 ECTS              | annually / Spring Semester 2018        |
| Bachelor's Degree in Computer Engineering                  | Kompüter mühəndisliyi, bakalavriat səviyyəsi                     | -                          | 6                                              | Full time / part time (dual) | no                       | 8 semester / 10 semester | 240 ECTS              | annually / Fall Semester 2011          |
| Bachelor's Degree in Information Technology                | İnformasiya texnologiyaları, bakalavriat səviyyəsi               |                            | 6                                              | Full time / part time (dual) | no                       | 8 semester / 10 semester | 240 ECTS              | annually / Fall Semester 2017          |
| Bachelor's Degree in Computer Science                      | Kompüter elmləri, bakalavriat səviyyəsi                          |                            | 6                                              | Full time / part time (dual) | no                       | 8 semester / 10 semester | 240 ECTS              | annually / Spring Semester 2023        |
| Bachelor's Degree in Mechatronics and Robotics Engineering | Mexatronika və robototexnika mühəndisliyi, bakalavriat səviyyəsi |                            | 6                                              | Full time                    | no                       | 8 semester               | 240 ECTS              | annually / Fall Semester 2018          |

<sup>3</sup> EQF = The European Qualifications Framework for lifelong learning

### Introduction

Western Caspian University (WCU) in Baku is the oldest private higher education institution in Azerbaijan, founded in 1991. Currently, the university consists of 8 faculties/schools and 11 departments that offer education in 30 undergraduate, 15 master's and 9 PhD programmes. The main areas of study include information technology, design and architecture, natural sciences, as well as business, economics and hospitality. In international rankings, it is listed among the top 15 universities in the country.

WCU's student body is significant with nearly 3,000 undergraduate students, a notable portion of whom receive a state-funded scholarship. According to WCU's website, there are 114 international students enrolled.

In the 2022/23 academic year, WCU had 251 academic staff, including 156 full-time, 14 part-time, and 81 hourly-paid teachers.

WCU has several research centres, focusing on sustainable development, Caspian Sea studies, applied politics, and environmental research.

The Department, named "Mathematics and Computer Technologies," started its activities in 1991 under the Faculty of High Technologies and Innovative Engineering. During its operation, the Department has trained specialists in the fields of Informatics and Computing Technology, Information Technologies and Systems Engineering, and Computer Engineering.

Since 2017, the department has transformed into the School of High Technologies and Innovative Engineering. The School aims to train professional, research-oriented, independent thinkers, and creative and innovative engineers in various engineering fields. Its goal is to meet the needs of society and industry in education, research, and applied fields, with the aim of becoming a leader in the education, research, and industrial sectors.

Teaching at the faculty is conducted in Azerbaijani, English, and Russian. Currently, the faculty offers education in 9 specialties for about 1100 students.

### Summary

**The experts positively notice the following aspects:**

- Students are very satisfied with the Computer Science and IT programmes.
- Dedicated and motivated teaching staff and good communication between students and teachers.

- Comprehensive tutorial and support system for students.
- Small classes which are taught in English and Azerbaijani, nice learning environment.
- Employers are satisfied with the qualification profile of the Computer Science and IT graduates.
- Good cooperation between stakeholders (employers) and the university.
- Modern and solid education with adequate soft- and hardware in computer sciences and IT.

**In the following areas, the experts see room for improvement:**

- Low number of new students in the Bachelor's degree programmes Device Engineering and especially in the Bachelor's degree programmes Mechatronics and Robotics Engineering. In the long run, undergraduate programmes with less than 10 new students per year seem not to be sustainable.
- Students' total workload needs to be verified and the ECTS points need to be awarded accordingly.
- The module descriptions need to be updated with respect to the students' workload calculation. Additionally, the course learning outcomes should be based on an internationally accepted taxonomy like Bloom's Taxonomy.
- There is no open Wi-Fi access for students at WCU.
- Teachers have no real opportunity to take a sabbatical; it would be useful to increase the academic mobility of staff members and students.
- No Diploma Supplement, which is aligned with the European template, is issued to the graduates.
- There is no guideline for the companies on the internship/final project.
- The six undergraduate programmes need to increase the scope and scientific demand of the final project to verify that students are able to collect, interpret, and critically evaluate information, to work independently on a scientific question from the respective field, using scientific methods. These competencies are expected from students in a study programme with EQF 6. It would be useful to add a course such as "Introduction to research methods and good scientific practise" to the curricula.
- WCU and the teachers should have more flexibility in introducing new courses or adjusting the content especially in fast developing areas such as computer sciences and

information technology. Needing to wait for four or five years is a long time and does not accommodate the needs of the employers. This includes the choice and selection of electives.

- Improve the internal quality assurance system and redesign the satisfaction questionnaires (open and course specific questions) and the respective reports (follow up measures/action plan).
- The Mechatronics and Robotics Engineering programme should include basic courses in mechanical and electrical engineering as well as a course on electric machines/drives.

## D Expert Report for the ASIIN Seal

### 1. The Degree Programme: Concept, content & implementation

|                                                                                                               |
|---------------------------------------------------------------------------------------------------------------|
| <b>Criterion 1.1 Objectives and learning outcomes of a degree programme (intended qualifications profile)</b> |
|---------------------------------------------------------------------------------------------------------------|

**Evidence:**

- Self-Assessment Report
- Study plans of the degree programmes
- Module descriptions
- Homepage WCU: <https://wcu.edu.az/en>
- Homepage School of-High-Technologies and Innovative-Engineering  
<https://wcu.edu.az/en/faculties/School-of-High-Technologies-and-Innovative-Engineering>
- Homepage Ba Computer Engineering: <https://wcu.edu.az/en/faculties/computer-engineering>
- Homepage Ba Computer Science: <https://wcu.edu.az/en/faculties/computer-science-id-978>
- Homepage Ba Device Engineering: <https://wcu.edu.az/en/faculties/instrumentmaking-engineering>
- Homepage Ba Information Security: <https://wcu.edu.az/en/faculties/information-security-id-515>
- Homepage Ba Information Technology: <https://wcu.edu.az/en/faculties/information-technologies>
- Homepage Ba Mechatronic and Robotics Engineering: <https://wcu.edu.az/en/faculties/engineering-of-electronics-telecommunications-and-radio>
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**

In Azerbaijan, Bachelor's degree programmes are regulated by the Ministry of Education of the Republic of Azerbaijan. Since the adaptation of the Azerbaijani university system to the

framework of the EHEA, the structure of university studies in Azerbaijan distinguishes between Bachelor's degrees (4 years of study (for full-time) or 5 years of study (for part-time)), usually 240 ECTS are awarded.

The experts base their assessment of the learning outcomes on the information provided in the module descriptions and in the Self-Assessment Reports of all three degree programmes under review. For all programmes, Western Caspian University (WCU) has described Learning Outcomes (LO), which cover a number of specific competences students should acquire in their respective degree programme.

The goal of the Bachelor's degree programme Computer Engineering is to train specialists with the theoretical and practical knowledge necessary for the development, design, operation and maintenance of computer systems, as well as for solving engineering problems in the field of computing and information technology. To this end, graduates should be familiar with using automated and integrated computer technologies to address a wide range of problems. This includes the ability to identify, formulate, and solve complex engineering problems using principles from math, science, and engineering. Additionally, they should be able to apply engineering design to meet specified needs, while considering health, safety, societal, economic, and environmental constraints.

Typically, the graduated can find jobs as computer hardware engineer, embedded systems developer, systems software engineer, network engineer, IoT systems designer, robotics systems engineer, cyber-physical systems developer, mobile systems developer, or high-performance computing engineer.

The Bachelor's degree programme Computer Science aims at training specialists with fundamental knowledge and practical skills in the field of theoretical and applied computer science, capable of developing and implementing effective, reliable and secure software solutions, observing professional and ethical standards, and continuously developing in the context of rapidly changing technologies and the global market. To achieve this goal, students should learn to use mathematical and statistical tools to analyze software systems and data, to apply computer science theory and software engineering principles to design computational solutions, to design, implement, and assess complex software systems, including web and mobile applications, and to develop critical thinking and research skills, promoting lifelong learning. Additionally, they should acquire the necessary knowledge and skills for employ modern computing tools and methods in practical work. In order to be able to work effectively in teams on design, evaluation, or implementation of computing systems.

Graduates of the Bachelor's degree programme Computer Science typically have a wide range of career opportunities because the degree provides both theoretical foundations

and practical technical skills. Common areas of occupation include software development and engineering, web development and design, data science and analytics, cybersecurity and information security, systems and network administration, AI and machine learning, database & cloud computing, as well as IT consulting and project management.

The Bachelor's degree programme Device Engineering is designed to prepare the graduates for working in the field of device engineering in sectors like oil & gas, manufacturing, energy, and healthcare. To this end, students should acquire basic knowledge in the fields of mathematics, natural sciences, and engineering sciences. Additionally, they should acquire the ability to conduct experiments according to specified methods with the processing and analysis of results, to analyse and apply physical systems using differential equations, control theory, and signal processing models. Moreover, they should be able to design and implement measurement systems for various physical parameters (temperature, pressure, flow, level, etc.), to understand sensor technologies, transducers, and their integration into control systems, to use software tools, to apply electronic circuit design principles in analog and digital instrumentation, as well as analyze and filter signals using appropriate signal processing techniques. Finally, they should be proficient in identifying engineering problems and developing appropriate solutions using analytical and experimental methods and be able to work effectively in a team.

Graduates of the Bachelor's degree programme Device Engineering can find employment in governmental and private organizations such as the energy sector, manufacturing companies, building and infrastructure projects, research institutes and universities, technology industries, consulting and management companies, and in healthcare and biomedical engineering institutions.

The Bachelor's degree programme Information Security is designed to train specialists in the field of information security, capable of solving complex problems related to the protection, reliable storage, transmission and processing of information, by using achievements in the field of mathematics and information technology as well as modern hardware and software. Graduates should be able to design, implement, and manage secure IT systems. The programme aims at equipping students with a strong foundation in programming, networks, system architecture, databases, and security methods, so that they can ensure confidentiality, integrity, and availability of information across complex systems. In addition, graduates should be able to communicate professionally (including in a foreign language) in their specialty, use modern IT tools and techniques effectively. This includes the ability to participate in establishing information security policies, organize and support the implementation of comprehensive security measures, and oversee implementation processes from a technical specialist's standpoint. Moreover, graduates should be able to

plan and manage professional tasks, improving their skills, organizing time, and meeting deadlines as well as apply ethical, social, and environmental responsibility in their work.

The programme prepares graduates for careers as Cybersecurity Analyst / Engineer, Penetration Tester / Ethical Hacker, Security Operations Center (SOC) Analyst, Information Security Officer / Manager, Cryptographer / Cryptanalyst, Risk and Compliance Analyst (e.g., GRC roles), Incident Responder / Forensics Analyst, Network Security Engineer, Identity and Access Management (IAM) Specialist, Security Auditor / Consultant.

The goal of the Bachelor's degree programme Information Technology aims to train well-qualified IT specialists with broad, up-to-date knowledge and hands-on skills in information and communication technologies. Its objectives include preparing graduates who can design, develop, operate, and manage complex IT systems, and contribute to both local and global technological innovation. The graduates are expected to apply ICT knowledge and methods in various domains using a solid understanding of computer science, networks, databases, and systems. In addition, they should be able to analyze and solve technical, organizational, and societal problems by selecting appropriate IT tools and resources. This includes the ability to work effectively in teams, plan and manage projects, communicate professionally, and to adapt to technological change by being able to learn new tools, follow trends, and contribute to innovation in IT. Moreover, graduates should understand ethical, legal, and security issues related to information systems — ensuring responsible IT use and development.

Graduates are usually employed as IT support specialist, systems administrator, network administrator / engineer, cloud engineer, IT project manager, database administrator, DevOps engineer, IT consultant, IT security specialist, or enterprise architect.

The Bachelor's degree programme Mechatronic and Robotics Engineering has the goal of training engineers with interdisciplinary knowledge in the field of mechanics, electronics, automatic control, information technology and robotics, capable of designing, developing, implementing and maintaining intelligent technical systems and robotic complexes, working effectively in multidisciplinary and international teams, observing professional and ethical standards, and adapting to the rapidly changing requirements of engineering practice and scientific and technological progress. To this end, graduates should be able to apply integrated knowledge of mechanics, electronics, and informatics to build and operate complex technical systems. Additionally, they should be able to apply kinematics, dynamics, control theory, measurement instruments, and programming to manage mechatronic devices. Moreover, graduates should understand new solutions for automating processes and controlling systems, and be able to diagnose, analyze, and troubleshoot robotic and automatic systems to improve their reliability. This includes the ability to design and reconfigure

process flows for robotic manipulators and mechatronic systems while ensuring safe operation and environmental compliance when controlling technological processes involving robotics.

Graduates can typically find a suitable occupation a robotics engineer, automation engineer, control systems engineer, mechatronics engineer, industrial automation specialist, machine vision engineer, manufacturing engineer, actuator and sensor systems developer, or embedded robotics developer.

Supplementing the subject-related qualification objectives, Bachelor's students should have adequate competences in oral and written communication skills, be capable of working autonomously as well as in a team-oriented manner and be able to conduct research activities. Furthermore, they should have trained their analytical and logical abilities, be able to apply information and communication technology, and show a social and academic attitude. Finally, students should acquire language skills and should develop a strategy for life-long learning.

In summary, the experts are convinced that the intended qualification profiles of all programmes under review allow graduates to take up an occupation, which corresponds to their qualification. The degree programmes are designed in such a way that they meet the goals set for them. The objectives and intended learning outcomes of all degree programmes under review are reasonable and well founded.

The experts conclude that the objectives and intended learning outcomes of the Bachelor's degree programmes under review adequately reflect the intended level of academic qualification (EQF 6) with the exception of the final projects which have currently not the required scientific depth and demand (see criterion 1.3).

|                                                   |
|---------------------------------------------------|
| <b>Criterion 1.2 Name of the degree programme</b> |
|---------------------------------------------------|

**Evidence:**

- Self-Assessment Report
- Order of the Ministry of Education of the Republic of Azerbaijan F-370 dated 13.08.2020

**Preliminary assessment and analysis of the experts:**

WCU awards a Bachelor of Science to the graduates of the six undergraduate programmes.

The original Azerbaijani names of the study programmes are determined by the established regulations, which is the Order of the Ministry of Education of the Republic of Azerbaijan

F-370 dated 13.08.2020. The names are generally accepted as the most representative terms for the study programmes by all the professional schools, high education institutions, and public administrations in Azerbaijan.

The experts confirm that the names of all six Bachelor's degree programmes appropriately reflect the focus and content of the respective study programme. Moreover, the English translation and the original Azerbaijani names of the programmes correspond with the intended aims and learning outcomes.

|                                 |
|---------------------------------|
| <b>Criterion 1.3 Curriculum</b> |
|---------------------------------|

**Evidence:**

- Self-Assessment Report
- Study plans of the degree programmes
- Module descriptions
- Homepage WCU: <https://wcu.edu.az/en>
- Homepage School of-High-Technologies and Innovative-Engineering  
<https://wcu.edu.az/en/faculties/School-of-High-Technologies-and-Innovative-Engineering>
- Homepage Ba Computer Engineering: <https://wcu.edu.az/en/faculties/computer-engineering>
- Homepage Ba Computer Science: <https://wcu.edu.az/en/faculties/computer-science-id-978>
- Homepage Ba Device Engineering: <https://wcu.edu.az/en/faculties/instrumentmaking-engineering>
- Homepage Ba Information Security: <https://wcu.edu.az/en/faculties/information-security-id-515>
- Homepage Ba Information Technology: <https://wcu.edu.az/en/faculties/information-technologies>
- Homepage Ba Mechatronic and Robotics Engineering: <https://wcu.edu.az/en/faculties/engineering-of-electronics-telecommunications-and-radio>
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**

All six Bachelor's degree programmes under review are designed for four years with 240 ECTS points. All study programmes are offered as full-time programmes, additionally, the

Computer Engineering, Computer Science, Information Security, and Information Technology programmes are also offered in a part-time variant with a duration of 10 semesters. Part-time education is intended for students of the Computer Engineering, Computer Science, Information Technology, and Information Security programmes who live in the regions and do not have the opportunity to study full-time in Baku. It also provides opportunities for those who already have secondary vocational education in the relevant field, are currently employed, and wish to obtain a Bachelor's degree. According to the Self-Assessment Report, part-time education is not considered feasible for the other programmes (Device Engineering and Mechatronics Engineering) as they require more laboratory work, intensive, and continuous practical training.

Each semester is equivalent to 15 weeks of learning activities. Besides these learning activities, there is usually one week for midterm exams and two weeks for final exams. The academic year is divided into two semesters: fall and spring.

Courses are offered in English and Azerbaijani; students have to decide at the beginning of their studies in which language they will study, share is about 50 % for each of the two languages. If students want to study in English they have to verify their English proficiency with the WCU language centre.

Some courses e.g. social physics is taught in three different study programmes, and the course is offered three times once for each study programme, sometimes specialisations are taught together but is only possible for the general courses, that have to be taken by all undergraduate students, the programme coordinators explain that this is a regulation from the Ministry of Education of the Republic of Azerbaijan, which states that different majors should be taught separately. Different but similar undergraduate programmes are offered because the Ministry wants the universities to offer such narrow specialisations

The structure of the curricula is similar for all six undergraduate programmes. It includes general studies (30 ECTS) of the following courses: "History of Azerbaijan", "Business and Academic Communication in Azerbaijani", "Business and Academic Communication in a Foreign Language 1 + 2", as well as the courses "Psychology / Sociology / Fundamentals of law / Engineering Ethics" and "Critical thinking / Fundamentals of Entrepreneurship and Business Introduction / Education and Career Planning". In addition, students have to cover compulsory (120 ECTS) and elective course (60 ECTS) in the specific area of the programme and have to conduct an internship (30 ECTS).

Students select the electives at the end of the academic year (April and May) for the following academic year (both semesters) through surveys. In the Bachelor's programmes, 12 elective course blocks are offered, each of them includes 2–3 courses.

The structure of the programmes is designed to meet state educational standards and includes lectures, laboratory work, seminars, and independent research. Students are assessed through coursework, laboratory reports, examinations, and a final exam.

Practical training is a significant component of the programme. Students have access to dedicated laboratory facilities, including computer rooms and specialized instrumentation labs, where they gain hands-on experience with real-world equipment and simulation tools. The programme is closely aligned with industry needs, and students benefit from the university's partnerships with leading companies, which provide opportunities for internships and practical projects.

Students must write a report on the results of the internship, which is usually conducted at a manufacturing enterprise or company, and defend it before a committee consisting of the university faculty and representatives of the hosting institution. The Student Internship Center of WCU is responsible for organising student internships. However, the experts observe that WCU issues no guideline for the hosting institution on conducting the internship/final project. This would be very useful, because this way the university's expectations and the tasks of the hosting institutions are made transparent to all involved parties (students, teachers, hosts). The guideline should include information on time commitment, supervision, and evaluation as well as legal regulations, safety measures and liability details. This prevents misunderstandings like treating interns as cheap labour or assigning work beyond their competence—both of which create problems for the host. A guideline builds trust and ensures that internships are upgraded from an informal favour into a well-managed collaboration that benefits the host institution, protects everyone involved, and ensures real learning rather than wasted effort.

The curricula of all six undergraduate programmes under review follow the national regulations for undergraduate studies and are organised by School of High Technologies and Innovative Engineering.

All six Bachelor's degree programmes include lectures, seminars, and laboratory classes. The theoretical foundation of the different engineering disciplines is presented in lectures during which students are explained the basic methods and concepts. In seminars, students discuss the material being studied and solve relevant tasks. In laboratory classes, students gain practical skills to work with specific laboratory equipment and modern methods of engineering and computer science.

The curriculum Bachelor's degree programme Computer Engineering combines theoretical foundations (mathematics, physics) with practical computer engineering courses, including programming, digital systems, microprocessor systems, computer architecture, operating systems, and networks. To graduate, students must complete an internship and defend

their results. The programme aims to develop not just technical skills but also teamwork, foreign language communication, and the ability to analyse and evaluate computing systems.

Graduates of the Bachelor's degree programme Computer Engineering have a wide range of career opportunities in both industry and research. This includes areas such as designing, coding, and testing software applications for desktop, mobile, web, or embedded systems, installing, managing, and securing networks and IT infrastructure, hardware design as well as data analysis and artificial intelligence.

The curriculum of the Bachelor's degree programme Computer Sciences focuses on modern programming, algorithms, data structures, databases, operating systems and computer networks, comparable to the university's Information Technologies and Computer Engineering curricula but with more emphasis on software and theoretical computing. Students study supporting mathematics and general university courses (such as humanities and business-related subjects) alongside technical modules and are prepared for roles in software development and IT-related fields.

Across eight semesters, students progress from introductory courses (programming basics, discrete mathematics, computer architecture) to more advanced topics like system programming, database systems and network technologies. As in the related Computer Engineering programme, completion typically includes an internship/practical component and a final dissertation or graduation project, integrating knowledge from earlier semesters.

The Bachelor's programme Device Engineering is designed to provide students with a strong foundation in basic engineering principles related to instruments and devices. The curriculum covers fundamental courses in mathematics, physics, and engineering, progressing to specialized modules on device design, production technologies, and instrument systems. The curriculum includes eight semesters with a gradual build-up from theoretical basics to practical application, including internships and a final graduation project or dissertation that integrates the acquired knowledge. The focus is on training skilled engineers capable of designing, manufacturing, and maintaining various devices, often with interdisciplinary insights from programming and information security fields housed in the same department. This ensures graduates are prepared for careers in engineering industries involving instrument-making and device technologies.

The Bachelor's degree programme Information Security combines foundational courses in programming, mathematics, computer architecture, and networks with specialized subjects in cybersecurity, cryptography, penetration testing, digital forensics, malware analysis, and security of industrial and corporate information systems. Alongside technical

knowledge, students develop skills in secure software development, legal and organizational aspects of information security, and foreign languages for professional communication.

The programme spans eight semesters, starting with fundamental courses and progressing to advanced security topics. It includes practical components like internships and a final dissertation project, ensuring students can apply theoretical knowledge in real-world contexts. The coursework emphasizes both the technical and managerial aspects of information security, preparing graduates for roles such as security analysts, penetration testers, and information security officers. This comprehensive structure blends theory, practice, and interdisciplinary skills to equip students for challenges in cybersecurity and information security fields

The curriculum of the Bachelor's degree programme Information Technology covers a broad mix of topics: modern programming languages, data structures, system programming, database systems, computer architecture, computer networks, and intelligent systems. Students also learn to design and develop complex information systems, apply algorithms in software systems, and analyse digital systems. Graduates are prepared for careers in areas such as information security, system analysis, management of information systems, and working in both public and private sector organisations that rely on technology.

The Bachelor's degree programme Mechatronics and Robotics Engineering is an interdisciplinary engineering programme. It integrates mechanics, electronics, automatic control, information technology, and robotics. The curriculum covers core subjects such as linear algebra, physics, computer graphics, mathematical analysis, control systems, sensors, robotic systems, AI, programming for machines and robots, engineering design, and simulation software (e.g., MATLAB, AutoCAD, SolidWorks).

The programme is structured over eight semesters, beginning with foundational courses in mathematics, physics, and basic engineering principles, progressing to advanced topics in robotics, automation, and intelligent systems. Students gain both theoretical knowledge and practical skills through modern laboratories and pre-diploma internships, culminating in a graduation thesis. Graduates are prepared for careers in diverse sectors such as telecommunications, aerospace, industry, agriculture, and automated systems development.

In addition to the “regular” fall and spring semesters, a short summer semester is offered. The short summer semester is organized so that students can make up failed or missed courses (cancellation of academic debts). The length of the summer semester is six weeks. Students' cannot take more than 9 ECTS points during the summer semester and must pay

additional fees for attending the courses. Teachers are recruited voluntarily for the summer semester. In this case, the amount of teacher's work is paid in an hourly manner.

The experts confirm that the degree programmes are organized in a modular way; each module is a consistent and standalone course consisting of three – six ECTS points. Each module lasts one semester. The majority of modules has pre-requisites, which should be passed before taking the module.

The experts learn during the audit, that the final project (internship) is usually conducted outside WCU. This has several advantages because working on the final project within a company allows students to tackle real-world problems rather than purely theoretical ones, bridging the gap between academic learning and practical application. In the case of WCU it is also important to point out that companies can provide access to data, technical equipment, and resources that are not available at the university (see criterion 3.2). Additionally, collaborating with a company helps students to build valuable contacts, which can be beneficial for job perspectives because companies often use these collaborations to identify and recruit promising graduates.

In the discussion with the experts, the employers express their general satisfaction with the qualification profile of the graduates of three programmes under review.

After analysing the module descriptions and the study plans, the experts confirm that all degree programmes under review are divided into modules and that each module is a sum of coherent teaching and learning units. All practical lab work and internships are well integrated into the curriculum and the supervision by WCU guarantees for their respective quality in terms of relevance, content, and structure. However, with respect to the Mechatronics and Robotics Engineering programme the experts emphasise that the curriculum should include compulsory basic courses in electrical engineering and mechanical engineering because mechatronics is fundamentally the integration of these disciplines. In electrical engineering, DC and AC networks, as well as passive and active components, should be taught. Circuit and control engineering should be covered, at least in their basic form. In mechanics and design engineering, in addition to design for manufacturability, the curriculum should include fundamentals of manufacturing technology, as well as the fundamentals of mechanical components and materials. Mechatronic systems—such as robots, automated machines, and smart devices—combine mechanical structures with electrical components (sensors, actuators, motors). Students must understand both domains at a basic level before they can meaningfully integrate them into a single system. Courses in control systems, robotics, automation, and embedded systems assume prior knowledge of mechanics (forces, motion, dynamics) and electronics (circuits, signals, power). Compulsory

basics ensure students are adequately prepared. Moreover, employers expect mechatronics graduates to understand mechanical designs and electrical systems, even if they later specialize. A solid foundation makes graduates more versatile and better able to collaborate in multidisciplinary teams.

Another topic that should be added to the curriculum of the Mechatronics and Robotics Engineering programme is a course in electrical machines and drives because these systems are at the heart of most mechatronic applications. Such as course should provide essential knowledge for understanding, designing, and integrating motion and energy conversion systems. The experts highlight that electrical machines and their drives are the primary actuators in robots, automated production systems, electric vehicles, and smart machinery. To this end, mechatronics graduates should understand how motion is generated and controlled in real systems. In order to provide courses in the before mentioned areas (mechanical engineering, electrical engineer, and electric machines/drives it would be necessary to have the necessary laboratories and instruments as well as qualified teachers.

With respect to the two engineering programmes (Device Engineering and Mechatronics and Robotics Engineering) the experts observe that WCU has the problem of very few new students on the one hand and a low demand by the employers for graduates with these majors on the other hand. If WCU fails to attract significantly more new students for these study programmes, it would be sensible to discontinue them. At the same time the experts notice positively that WCU, especially the School of High Technologies and Innovative Engineering, has its strength in computer sciences and information technology. Graduates with comprehensive IT skills are in high demand in Azerbaijan and these study programmes require less physical infrastructure (laboratories, instruments) and scale well with the available facilities at WCU. Specializing in computer sciences and information technology would allow Western Caspian University to build a recognizable brand in these areas, attract better students and compete on clear strengths.

In the discussion with the experts, students point out that in some courses the content is repeated e.g. in the area of computer architecture. Some intended repetition is fine but teachers should communicate with each other about the content taught in their courses, as this helps to ensure that courses do not overlap and build logically upon each other. Without coordination, students may encounter the same topics repeatedly in different courses or, conversely, miss essential material.

The most serious issue the experts observe is the quality of the internships (final projects) and the respective reports. The final project and the respective written report need to address a well-formulated question, problem, or objective relevant to the field of study. The scope and scientific depth should be appropriate for a Bachelor's level and the project

needs to be based on relevant scientific literature. In the final project, the students should demonstrate understanding of key concepts, theories, and prior work related to the chosen topic. Currently, the written reports have not the required scientific depth and scope. Although national regulations for the final projects are fulfilled by WCU, the ASIIN standards and EQF 6 require a scientifically more demanding final project which shows that the students have acquired the necessary research and analytical abilities. The final project and the written report need to verify that students are able to collect, interpret, and critically evaluate information, and use evidence-based reasoning. Projects leading to the Bachelor's thesis could well involve teamwork or could be done in the course of an internship, as this is an important aspect of employability. Putting a stronger emphasis on research activities and involving the Bachelor's students is an important aspect if WCU wants to achieve its goal of further increasing its research activities. To this end, the six undergraduate programmes need to increase the scope and scientific demand of the final project to verify that students have achieved these competencies.

It would also be possible to divide the module "internship" in two separate courses. The first course could be the internship, as currently conducted. The second course could be called Bachelor's thesis and would be a separate course. Other universities in Azerbaijan follow this model and their experiences are very positive. The experts consider a Bachelor's thesis an essential part of academic studies because it demonstrates the students' ability to conduct a research project and to summarise and present the results. This should include the formulation of a research hypothesis, the design of a research project, literature research, practical work, and a written report, including a discussion of the results in view of the relevant corresponding literature. In addition, the Bachelor's thesis serves as an effective tool to measure the academic level of theoretical and practical competencies obtained by a soon-to-be graduate. At the same time, it prepares students for master's degree studies, where scientific research is one of the central objectives.

Otherwise, the experts are satisfied with the structure and content of the six undergraduate programmes under review. The courses are structured logically, with the right sequence based on prerequisite knowledge.

In summary, the experts confirm that the choice of modules and the structure of the curriculum ensure that the intended learning outcomes of the respective degree programme can be achieved.

### *Periodic Review of the Curriculum*

According to the Self-Assessment Report, the curricula are based on national standard curricula and, therefore, only the elective modules can be freely designed by the university.

The selection and inclusion of elective courses in the curriculum are discussed at the university's Academic Council. To ensure that students' opinions and interests are taken into account, representatives of the WCU's Student Scientific Society and Student Youth Organisation also participate in these discussions, which also take proposals of stakeholders from the industry into account.

The study programmes and their respective curricula are periodically reviewed based on the programme's objectives as defined by the Ministry of Education of the Republic of Azerbaijan. 60 out of 240 credits are included in the elective modules. These modules are reviewed by the head of the department, the main teachers of the specialty in accordance with the requirements for graduates with this profile. The review also includes whether the order of modules and subjects allows students to complete their studies during the standard period of study. Major revisions are done every four to five years, minor changes in the courses can be applied every semester.

Both students and stakeholders confirm their involvement. However, the programme coordinators regret that their opportunities to adjust the study plans are limited. They would wish for more independence in designing the study plans and the specialisation courses. This wish is explicitly supported by the experts who point out that WCU and the teachers should have more flexibility in introducing new courses especially in fast developing areas such as computer sciences and information technology, needing to wait for four or five years is a long time and does not accommodate the needs of the employers. This includes the choice and selection of electives. New topics in computer sciences and information technology, emerge every year and this is too fast for rigid curricula. If teachers aren't allowed to adapt courses and offer new topics, students will graduate with outdated skills. Flexibility keeps curricula relevant, practical, and intellectually alive and lets teachers translate current developments into teaching content.

In summary, the experts confirm that the curricula are periodically reviewed with regard to the implementation of the programme objectives in a process that involves all relevant stakeholders, including the students. However, more influence of the programme coordinators in designing the study plans would be useful.

#### *International Mobility*

WCU provides some opportunities for students to conduct internships and exchange programmes abroad. The International Relations Department (IRD) is responsible for managing and coordinating the international activities such as managing student mobility pro-

grammes, developing and maintaining relationships with partner institutions and organisations around the world, recruiting and admitting international students, providing support and assistance to international students during their time at WCU.

Students from WCU in general and in particular from the six study programmes under review have the opportunity to participate in academic mobility programmes. Within the Erasmus+ framework, computer science and information technology students regularly study at the Schmalkalden University of Applied Sciences in Germany for one semester. WCU is actively working to ensure that students participate in mobility programmes and that students from other countries visit WCU. For example, students from the University of Central Florida and DAAD (German Academic Exchange Service) participated in the WCU summer school in the 2022/2023 academic year. WCU students also join programmes such as “Language Program” and “Overseas Professional and Intercultural Training Program” with the participation of the American Councils for International Education: ACTR/ACCELS. Additionally, international teachers/professors give lectures to students of WCU. Furthermore, the “Mevlana Programme” offers opportunities for academic mobility with Turkish universities

However, students’ and teachers’ academic mobility is still low and could be better promoted and increased. As the experts learn during the audit, WCU just recently signed a new Memorandum of Understanding with Westsächsische Hochschule Zwickau, which includes students’ and staff exchange. The experts observe that WCU is actively expanding its network of international partners and encourages its students to participate in mobility programmes. For example, in 2025/26 six students from the computer science and information technology programmes will go abroad to universities in Turkey and Germany. The students confirm in the discussion with the experts that WCU good international contacts are one of the reasons why they decided to study at WCU.

Finally, the experts observe that currently teachers at WCU have no real opportunity to conduct a sabbatical. The experts emphasise that giving faculty members the chance to take a sabbatical is one of the most reliable ways how a university can increase its research output and quality. During normal semesters, faculty are occupied with teaching, grading, meetings, advising, and administration. Sabbaticals enable teachers to concentrate on their research activities and to collaborate with their international partners. This fosters creative intellectual work which may result in co-authored papers and joint grant applications. Thus, research output increases not just in volume, but in visibility and impact. This improves the university’s reputation, rankings, and ability to attract funding and strong graduate students. A sabbatical is a strategic investment that trades short-term teaching coverage for long-term gains in research productivity, quality, reputation, and funding.

In summary, the experts appreciate the efforts to foster international mobility and encourage WCU in further pursuing this path.

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| <b>Criterion 1.4 Admission requirements</b> |
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**Evidence:**

- Self-Assessment Report
- Homepage WCU: <https://wcu.edu.az/en>
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**

The admission procedure for Bachelor's students is based on the Unified National Exams: Azerbaijan citizens holding appropriate documents from a high school are required to pass the entrance examination, which is centrally organised by the State Students Admission Commission (now State Examination Center, SEC). The entrance examination is carried out in two stages. In the first stage, applicants take entrance exams in Azerbaijani or Russian language and in foreign languages and mathematics. The maximum number of points that applicants can earn in the first stage of the entrance exam is 300 points, with 100 points for each subject. The second stage of entrance exams to higher education institutions depends on the concrete study programmes that the applicants want to join. The maximum score that applicants can get in the second stage of the entrance exam is 400 points. Based on the total score, students are admitted to the different programmes at universities in Azerbaijan.

For international applicants, admission is managed directly by WCU. Enrollees are admitted without passing the centralized examination of Azerbaijan. The applicants apply directly to the university electronically and are registered for the respective programme.

The maximum intake per year is quite different for each of the six Bachelor's degree programmes and ranges from 60 (Ba Computer Engineering, Ba Information Security,) via 50 (Ba Computer Sciences, Ba Information Technology) and 30 (Ba Device Engineering) to only 10 (Ba Mechatronics and Robotics Engineering). The numbers of available places and newly enrolled students in the six Bachelor's degree programmes for the last five academic years are depicted in the following tables:

| Year      | Available Seats | Admitted Students | Admission Rate (%) |
|-----------|-----------------|-------------------|--------------------|
| 2020/2021 | 35              | 26                | 74.28              |

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|           |    |    |       |
|-----------|----|----|-------|
| 2021/2022 | 40 | 27 | 67.5  |
| 2022/2023 | 50 | 37 | 74    |
| 2023/2024 | 50 | 38 | 76    |
| 2024/2025 | 60 | 53 | 88.33 |

Table 1: Statistical data on enrolled students in Computer Engineering, Source: SAR WCU

| Year      | Available Seats | Admitted Students | Admission Rate (%) |
|-----------|-----------------|-------------------|--------------------|
| 2020/2021 | -               | -                 | -                  |
| 2021/2022 | -               | -                 | -                  |
| 2022/2023 | -               | -                 | -                  |
| 2023/2024 | 40              | 33                | 82.5               |
| 2024/2025 | 50              | 36                | 72                 |

Table 2: Statistical data on enrolled students in Computer Science, Source: SAR WCU

| Year      | Available Seats | Admitted Students | Admission Rate (%) |
|-----------|-----------------|-------------------|--------------------|
| 2020/2021 | 15              | 1                 | 6.66               |
| 2021/2022 | 10              | 3                 | 30                 |
| 2022/2023 | 10              | 8                 | 80                 |
| 2023/2024 | 20              | 13                | 65                 |
| 2024/2025 | 30              | 9                 | 30                 |

Table 3: Statistical data on enrolled students in Device engineering, Source: SAR WCU

| Year      | Available Seats | Admitted Students | Admission Rate (%) |
|-----------|-----------------|-------------------|--------------------|
| 2020/2021 | 15              | 11                | 73.33              |
| 2021/2022 | 20              | 9                 | 45                 |

|           |    |    |       |
|-----------|----|----|-------|
| 2022/2023 | 40 | 25 | 62.50 |
| 2023/2024 | 55 | 45 | 81.81 |
| 2024/2025 | 60 | 53 | 88.33 |

Table 4: Statistical data on enrolled students in Information Security, Source: SAR WCU

| Year      | Available Seats | Admitted Students | Admission Rate (%) |
|-----------|-----------------|-------------------|--------------------|
| 2020/2021 | 15              | 13                | 86.66              |
| 2021/2022 | 20              | 16                | 80                 |
| 2022/2023 | 40              | 35                | 87.50              |
| 2023/2024 | 55              | 42                | 76.36              |
| 2024/2025 | 50              | 49                | 98                 |

Table 5: Statistical data on enrolled students in Information Technology, Source: SAR WCU

| Year      | Available Seats | Admitted Students | Admission Rate (%) |
|-----------|-----------------|-------------------|--------------------|
| 2020/2021 | 15              | 1                 | 6.66               |
| 2021/2022 | 10              | 0                 | 0                  |
| 2022/2023 | -               | -                 | -                  |
| 2023/2024 | -               | -                 | -                  |
| 2024/2025 | -               | -                 | -                  |

Table 6: Statistical data on enrolled students in Mechatronics and Robotics Engineering, Source: SAR WCU

WCU explains during the audit that for the 2022/2023, 2023/2024, and 2024/2025 academic years, the Ministry of Education of the Republic of Azerbaijan did not allocate admission places for the Mechatronics and Robotics Engineering programmes at WCU. For the 2025/2026 academic year, 26 students were admitted out of 40 available seats.

Unfortunately, many students lack a full understanding of the significance of certain specialized programmes, such as Mechatronics and Robotics Engineering. They are often unclear about the career opportunities these fields can offer, leading many to choose disciplines they believe will guarantee employment in government institutions.

The experts notice the low number of new students in the Bachelor's degree programmes Device Engineering and especially in the Bachelor's degree programmes Mechatronic and Robotics Engineering and discuss this issue with the programme coordinators. They learn that specialized technical programmes such as mechatronics, robotics, or device engineering suffer from low employment opportunities in Azerbaijan. Graduates of general-purpose engineering, computer science, or business programmes have better career opportunities. Additionally, there is competition from other universities in Azerbaijan that offer similar programmes. Moreover, in recent years, fields like software development, IT, cybersecurity, and data science attract more students because they are offering good job prospects and flexibility. The experts understand these problems and hope that the international accreditation of the two engineering programmes will WCU to attract more students. WCU may also attract more new students by making its study programmes more visible e.g. by using social media, highlighting international collaboration, internship opportunities and research areas. Additionally, it would be possible to offer workshops, tech fairs, and lectures to high schools students to introduce them to fields like mechatronics, robotics, computer engineering, or device engineering. In the long run, undergraduate programmes with less than 10 new students per year seem not to be sustainable.

The national education law grants every Azerbaijan citizen the right to one free-of-charge higher education programme at each academic level and grants equal opportunities to every applicant as the admission is carried out based on admission test results. However, as the university representatives explain, this does not mean that tuition is free for all students. Instead, depending on the results of the admission test, there are students who study on a state scholarship basis while other students have to pay regular tuition fees. For students without a scholarship, the tuition fee amounts to AZN 3,200 – 3,900 (EUR 1,600-2,000) per year. To motivate students, various scholarships are provided by the government. The number of available scholarships for each faculty is determined by state order. For foreign applicants, separate selection procedures are defined, which include an interview and the requirement of tuition payment. The financial support depends on the students' GAPF (General Average Progress Factor). In addition, private companies offer scholarships and students from low-income families as well as students with disabilities can receive a tuition waiver.

The admission of foreign students is also regulated at the national level and managed via an online portal. As the experts positively acknowledge, respective rules for the recognition of qualifications obtained at foreign higher education institutions are defined and apply.

In summary, the experts find the terms of admission to be binding and transparent. They confirm that the admission requirements support the students in achieving the intended learning outcomes.

|                                            |
|--------------------------------------------|
| <b>Criterion 1.5 Work load and credits</b> |
|--------------------------------------------|

**Evidence:**

- Self-Assessment Report
- Study plans
- Module descriptions
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**

WCU applies the European Credits Transfer System (ECTS) for measuring the students' total workload. The experts confirm that ECTS points are awarded for all mandatory parts of the degree programmes, including the internship. The workload includes face-to-face teaching hours, individual studying-time, as well as preparation for and taking part in the examinations.

The Bachelor's degree programmes encompass 240 ECTS and one ECTS credit is equal to 30 hours of students' total workload. For each semester, the academic calendar is organized into 15 weeks devoted to lectures and tutorials and 5 weeks intended for exams (at the end of the semester). The volume of the students weekly load in the classroom and outside the classroom is 45 hours.

In the discussion with the students the experts see that the students' total workload is appropriate, but they underscore that WCU needs to verify if the students' total workload is aligned with the awarded credit points.

WCU should follow the ECTS Users' Guide to determine the students' total workload. As described in the ECTS Users' Guide, the estimation of students' workload should include all learning activities. This is the time students typically need to complete all learning activities (such as lectures, seminars, projects, practical work, self-study and examinations). In other words, a seminar and a lecture may require the same number of contact hours, but one may require significantly greater workload than the other because of differing amounts of independent preparation by students.

As workload is an estimation of the average time spent by students to achieve the expected learning outcomes, the actual time spent by an individual student may differ from this estimate. Individual students differ: some progress more quickly, while others progress more slowly. Therefore, the workload estimate should be based on the time an “average student” spends on self-studies and preparation for classes and exams. The initial estimation should then be verified via students’ satisfaction questionnaires.

Since the workload of the students was only estimated by the programme coordinators, the experts expect WCU to re-evaluate the calculation of ECTS points and to ask the students about their actual workload, especially the time they need for self-studies, for each course. For example, it would be very useful to add a respective question to the students’ satisfaction questionnaires (see criterion 5).

In any case, WCU needs to verify the students’ total workload and make sure that the actual workload and the awarded ECTS points correspond with each other. This information should be made transparent in the module descriptions and the study plans. This alignment guarantees that the credits awarded accurately represent the time and effort students are expected to invest, making the educational process transparent for all stakeholders, including students, teachers, and external evaluators. By verifying the actual workload, institutions ensure that their courses meet these standards, maintaining comparability with other institutions both nationally and internationally. This is especially important for student mobility and the recognition of qualifications, as ECTS is used as a common "currency" for credit transfer.

In summary, the experts conclude that the total workload of the degree programmes is adequate and that there is no structural pressure on the quality of teaching and the level of education due to the workload. The students express their general satisfaction with the amount and the distribution of their workload.

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|--------------------------------------------------------|
| <b>Criterion 1.6 Didactic and Teaching Methodology</b> |
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**Evidence:**

- Self-Assessment Report
- Study plans
- Module descriptions
- Discussions during the audit

### **Preliminary assessment and analysis of the experts:**

During the classes, active and interactive teaching methods (e.g. lectures, discussions, reports, presentations, and group work) are applied. WCU wants to encourage the students to gain knowledge from different scientific areas and wants them to be able to solve specific problems through an interdisciplinary approach. This should ultimately contribute to the transition from a teacher centered to a student-oriented teaching method. In order to involve all students in the learning process and to develop their thinking and analytical skills, the teaching staff uses several methods of training and gives assignments on different levels of complexity.

The most common method of learning in the Bachelor's degree programmes is class session, with several courses having integrated laboratory work. Lecturers generally prepare presentations to support the teaching process. At Bachelor level, the students first gain theoretical knowledge and have more practical classes in their further studies. In general, the following teaching methods are used in the degree programmes: lectures; seminars, laboratory classes, internship, small group activities, and final thesis.

Traditional teaching methods are face-to-face lectures and are class based, requiring all students to attend classes. At least 75% of class attendance is compulsory for all the courses. Lectures are conducted using standard computer based presentations in the form of pre-prepared slides. In addition, white boards and marker pens are used whenever necessary in order to explain difficult topics in greater detail or to answer student questions. Material for lectures such as syllabus, examination questions, presentations topics, slides and additional literature are uploaded to the university's electronic system (Hemis) by every teacher. Every student has access to the system and can download all necessary information. Results of laboratory works and midterm exams, presentations scores, timetable and final exam scores are available on this page

With individual or group assignments, such as discussions, presentations, or written tasks, students are expected to improve their academic as well as their soft skills. Laboratory work covers laboratory preparation, pre- or post-tests, laboratory exercises, reports, discussions, and presentations. In addition, practical activities should enable students to be acquainted with academic research methods.

In summary, the expert group considers the teaching methods and instruments to be suitable to support the students in achieving the intended learning outcomes. In addition, they confirm that the study concepts of all programmes under review comprise a variety of teaching and learning forms as well as practical parts that are adapted to the respective subject culture and study format. It actively involves students in the design of teaching and learning processes (student-centred teaching and learning).

**Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 1:**

The experts appreciate that WCU tries to ensure more active and structured participation of the programme coordinators in the stages of curriculum revision. To this end, programme coordinators now participate as members of the curriculum development commissions based on a decision of the WCU Academic Council. The experts hope that this participation gives the programmes coordinators and the teachers more opportunities to introduce new courses or to adjust the course content especially in fast developing areas such as computer sciences and information technology.

The experts thank WCU for explaining that the university has established methodological guidelines and relevant programme documents governing the organisation and implementation of internships and final projects. These documents are formally in place and operational. The experts are satisfied with the submitted documents.

The experts see that WCU plans to introduce compulsory foundational courses in electrical and mechanical engineering in the Mechatronics and Robotics Engineering programme. However, they expect WCU to provide the necessary verification, via an updated study plan and the respective module descriptions, that these courses have been implemented.

The experts understand that WCU does not want to change the organisation of the “Industrial Training” and will not divide it into two separate courses (Industrial Training and a distinct Bachelor’s Thesis). Nevertheless, it is necessary to increase the scope and scientific demand of the final project to verify that students are able to collect, interpret, and critically evaluate information, to work independently on a scientific question from the respective field, using scientific methods.

The experts are glad that WCU recognises the positive effects of a sabbatical and will include the implementation of a sabbatical in its Strategic Development Plan for 2026–2030.

The experts support WCU in its plan to enhance the promotion of its study programmes, provide clearer information on career opportunities, strengthen collaboration with industry partners, and increase awareness-raising activities. They hope that this will lead to a higher number of new students in the engineering programmes.

The experts understand that the determination of students’ total workload at WCU includes all learning activities and not just contact hours. However, they point out that it is necessary to verify how much time students really spend on each course and not just estimate it. To this end, it would be useful to include a respective question in the satisfaction

questionnaires. In any case, the students' workload needs to be verified regularly and the awarded ECTS points need to be aligned with this.

The experts consider criterion 1 to be mostly fulfilled.

## 2. Exams: System, concept and organisation

### **Evidence:**

- Self-Assessment Reports
- Module descriptions
- WCU Examination Regulations
- Discussions during the audit

### **Preliminary assessment and analysis of the experts:**

According to the Self-Assessment Report, there is a period for midterm exams and a period for the final exams. Periods of examinations are scheduled in the academic calendar. During the examination period students take exams according to the approved schedule.

A maximum of 100 points can be earned per subject in a given semester. Of this total, 50% is derived from coursework and participation throughout the semester, while the remaining 50% is based on exam performance. A student who misses more than 25 percent of the classes in a subject is not allowed to take the final exam. The details, which assessment forms are used in which courses and how they contribute to the final grade, are described in the respective module descriptions. Final exams are held after the 15th week.

The most common type of evaluation used are written examinations; however, quizzes, laboratory work, assignments (small projects, reports, etc.), presentations, and seminars may contribute to the final grade. Written examinations, either closed-book or open-book, typically include short answers, problem-solving or case-based questions, and calculation problems.

Some lecturers also give multiple choice or true-false questions in examinations or quizzes. The grade from laboratory work usually consists of laboratory skills, discussions, reports, and oral exams. Students can access their results of laboratory works, presentations scores, timetable and final exam scores via WCU's digital platform "HEMIS".

Students (excluding those with valid reasons for missing the exam) may retake exams for a maximum of two courses per semester (once per subject) without repeating the course.

Students who missed the exam for a valid reason are permitted to take the exam once before the start of the next semester. A student who cannot sit a written examination because of ill health must bring a valid doctor's certificate. If the sum of the student's points for the exam and for academic activity during the semester is less than 51, the student receives an unsatisfactory grade in the corresponding subject.

Students who cannot attend practical courses for acceptable reasons can repeat the laboratory work later; the lecturers are responsible for the arrangement. Students can also ask for explanations and can appeal their grades. The details and regulations related to the exams are described in the WCU Examination Regulations.

The grades for the exams range from A to F, and/or between 100 and 0. In order to compensate for a final examination that has not been passed, a student can have a re-sit or must repeat the course in the next semester or in the short summer semester. The summer semester is aimed at students who have performance deficits and have failed or missed some exams. An additional fee is charged for each credit point to be made up.

A student is assessed on the total number of points earned in each subject during the semester and the final examination as follows:

| Grade Points | Course Grade | Grade Meaning                |
|--------------|--------------|------------------------------|
| 91 – 100     | A            | <i>Excellent</i>             |
| 81 – 90      | B            | <i>Very good</i>             |
| 71 – 80      | C            | <i>Good</i>                  |
| 61 – 70      | D            | <i>Sufficient</i>            |
| 51 – 60      | E            | <i>Mediocre</i>              |
| less than 51 | F            | <i>Fail / Unsatisfactory</i> |

Table 7: Grading scheme, Source: SAR WCU

The ECTS grade is a relative grading indicating the student's performance within the cohort; A top 10%; B next 15%; C next 35%; D next 20%; E next 15%; F next 5%.

With respect to the internship assessment, the programme coordinators explain that students must prepare a report on the results of the internship conducted at a manufacturing enterprise or company during the last semester and defend it before a committee consisting of university faculty members and representatives of the hosting institution. The experts are satisfied that the students need to defend their internship report but point out that this should also be mentioned in the respective module description.

The exams offer special methods for people with disabilities e.g. providing visually impaired students with enlarged font on paper during test exams. An oral exam is conducted for students with limited writing skills. For a visually impaired student, the exam is organized only in audio format. The exam for students with disabilities (cerebral palsy) is organized online.

Students have the right to appeal against grades within 24 hours from the publication of the exam results in the academic information system “HEMIS”. There is an Appeals Committee which consists of at least five members of the academic staff that were not involved in the original assessment.

The students confirm during the audit that the exam load is appropriate and they are well informed about the examination schedule, the examination form, and the rules for grading. Students are generally satisfied with the fairness and transparency. They also have the right to review their exams as per national laws. However, according to the students’ feedback, there is a need for more group work and presentations as part of their assessment. Also, they would like to have more project type assessments instead of written final exams.

In summary, the experts confirm – besides the mentioned deficits - that the different forms of examination used are competence-oriented and are suitable overall for verifying the achievement of the intended learning outcomes as specified in the respective module descriptions. The form of examination is determined individually for each course and published in the respective module description.

**Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 2:**

The experts encourage WCU to improve the assessment process by integrating group work, presentations, and project-based assignments. This will promote the transition from teacher centred to student centred teaching and learning processes.

The experts consider criterion 2 to be mostly fulfilled.

### 3. Resources

|                                            |
|--------------------------------------------|
| <b>Criterion 3.1 Staff and Development</b> |
|--------------------------------------------|

**Evidence:**

- Self-Assessment Report

- Staff Handbooks
- Study plans
- Module descriptions
- Discussions during the audit

#### **Preliminary assessment and analysis of the experts:**

At WCU, the staff members have different academic positions. There are professors, assistant professors, and lecturers. The academic position of each staff member is based on research activities, publications, academic education, supervision of students, and other supporting activities.

According to the information provided by WCU, there are 54 teachers involved in the six Bachelor's degree programmes under review, among them three full professors, 5 assistant professors, and 22 lecturers. The full professor and the associate professors hold a PhD degree, while 12 of the lecturers have a Master's degree. The exact numbers are shown in the following table:

|           | Academic Staff   |              |                     |           | Teaching Staff with Doctoral Degree |
|-----------|------------------|--------------|---------------------|-----------|-------------------------------------|
|           | Non-PhD Lecturer | PhD Lecturer | Assistant Professor | Professor |                                     |
| Full-time | 12               | 10           | 6                   | 3         | 19                                  |
| Total     | 34               | 11           | 6                   | 3         | 20                                  |

Table 7: Overview Academic Teaching Staff, Source: SAR WCU

In addition, there are administrative staff, technicians and some visiting lecturers from other universities in each department and each faculty.

From the provided staff handbook, the experts derive that most of the teachers have received their academic education in Azerbaijan. In order to further promoting the university's internationalisation, it would be a good idea to send promising graduates abroad for attending PhD programmes at renowned international universities and then subsequently hiring them as teachers.

WCU has a policy for promoting the academic staff based on their research activities and scientific publications. There is a scoring system in place, where the teachers get a certain number of points based on the number and type of publications. In addition, the academic contributions e.g. attending conferences are also taken into account. Teachers also receive financial benefits according to their academic score. This scoring system is quite unusual in

comparison to other European countries, but the teaching staff is satisfied with it and expresses no critique.

All fulltime members of the teaching staff are obliged to be involved in teaching/advising, research, and administrative services. However, the workload can be distributed differently between the three areas from teacher to teacher.

During the audit, the experts learn that there are 15 weeks of teaching in every semester. However, the teaching load differs from semester to semester and from teacher to teaching. The respective national regulation states that teachers should spend 550 hours per year in direct contact with students. This includes lectures, laboratory work, and advising students. The teachers confirm that their teaching load is adequate and leaves them enough room for conducting research activities.

In summary, the experts confirm that the composition, scientific orientation and qualification of the teaching staff are suitable for successfully implementing and sustaining the degree programmes. However, teaching is dominant and the teachers at WCU have hardly any scientific publications in renowned international journals.

The experts discuss with WCU's management, how new staff members are recruited. They learn that every year the schools and departments announce their vacancies to WCU's management, which publicly announces the vacancies. One way to recruit new teachers is to hire promising Master's students from WCU after completing their Master's degree. They usually enrol in a PhD programme parallel to teaching at the university. After finishing their PhD programme and fulfilling other criteria with respect to teaching, research, and publications, teachers can apply for being promoted to Assistant Professor. If WCU is satisfied with the teachers' performance an unlimited contract is offered. The promotion system is clear and follows national legislation.

### *Staff Development*

WCU encourages training of its academic and technical staff for improving the didactic abilities and teaching methods. As described in the Self-Assessment Reports, faculty members regularly participate in training or workshops.

Faculty members are encouraged to write and publish technical articles and books, to attend external seminars and conferences in order to renew and broaden their technical knowledge, to attend short training sessions organized by the university and the department from time to time, and to give internal seminars and short training courses relevant to their fields of expertise. In addition, all staff members take part at in-house and external training courses.

The experts discuss with the members of the teaching staff the opportunities to develop their personal skills and learn that the teachers are satisfied with the internal qualification programme at WCU, their opportunities to further improving their didactic abilities and to spending some time abroad to attend conferences, workshops, or seminars.

Staff development is supported by Training and Evaluation Department, which offers various online and in-person training in software tools, teaching methods, lab skills, and research support. New staff members also receive orientation training. Training needs are identified via staff surveys.

In summary, the experts confirm that WCU offers sufficient support mechanisms and opportunities for members of the teaching staff who wish for further developing their professional and teaching skills. The teaching staff is competent and their English proficiency is sufficient. There's clear attention to personal and professional development.

### *Student Support*

WCU offers a comprehensive advisory system for all undergraduate students. At the start of the first semester, every student is assigned to a tutor. Each tutor is a member of the teaching staff and is responsible for a group of students from his classes. He/she is a student's first port of call for advice or support on academic or personal matters.

The role of the tutor is to help the students with the process of orientation during the first semesters, the introduction to academic life and the university's community, and to respond promptly to any questions. They also offer general academic advice, make suggestions regarding relevant careers and skills development and help if there are problems with other teachers. The students confirm during the discussion with the experts that they all have a tutor who they can approach if guidance is needed.

In general, students stress that the teachers are open minded, communicate well with them, take their opinions and suggestions into account, and changes are implemented if necessary.

Students who prepare their final project have one or more supervisors, who are selected based on the topic of the final project. The role of the final project supervisor is to guide students in accomplishing their final project, e.g. to finish their research and complete the final project report.

Students can receive assistance from the Student and Alumni Internship and Development Centre of WCU about career guidance and consultancy, career development training, soft skill training, and job opportunities. The Centre provides information on training and job seeking to help students develop career plans and workplace understanding. In addition, the Centre supports students in finding suitable jobs by organising a job fair two or three

times every year and by forwarding job vacancies to the students. Moreover, during the internship students are introduced to professional life and acquire additional skills that help them finding an adequate position after graduation.

Finally, there are several student organizations at WCU, for example the Student Youth Organization (SYO), which is a self-governing body representing students. It surveys student views, proposes improvements to student life, protects student rights and interests, and helps address concerns about social or academic life. Additionally, WCU hosts a wide variety of clubs addressing different interests such as Sports Club (football, basketball, volleyball, climbing/mountaineering, table tennis, etc.), Robotics Club (robotics, electronics, 3D-printing, prototyping), Eco Club (for students interested in environmental issues), Conversation Club (English-language conversation and cultural exchange), Intellectual Games Club (organizes quizzes, brain games, and knowledge competitions), Debate Club (for students interested in public speaking, argumentation, and rhetorical skills) Book Club, Arts / Culture Clubs (theatre, music, singing, dancing; etc.), and Adventure Clubs (hiking, outdoor activities).

The experts notice that there are enough resources available to provide individual assistance, advice and support for all students. The support system helps the students to achieve the intended learning outcomes and to complete their studies successfully and without delay. The students are well informed about the services available to them. In summary, the comprehensive tutorial and support system for students is one of the strong points of the degree programmes.

|                                          |
|------------------------------------------|
| <b>Criterion 3.2 Funds and equipment</b> |
|------------------------------------------|

**Evidence:**

- Self-Assessment Reports
- Visitation of the facilities
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**

As a private institution, WCU has budgetary independence and can manage the finances on its own. Nevertheless, it is bound to the governmental provisions for the organisation of the education and receives state funding for it. According to the university representatives, the distribution of the total income encompasses roughly 30% government funds, 40% through tuition fees, and 30% from corporate resources. Corporate income stems from the university's business units such as the university hotel. The experts consider this a solid financial basis for the delivery of the programmes.

With respect to the IT-infrastructure, the experts suggest that WCU should offer Education Roaming (eduroam), which is an initiative that provides employees and students at participating universities and organisations with Internet access at the sites of all participating organisations using their own username and password. This facilitates academic mobility for teachers and students and enables them to access the internet at every participating institution without any restrictions.

During the discussion with the experts the students point out that there is no open Wi-Fi access for them at WCU. Computers in the labs are connected to the internet via cable and only teachers have a wireless access to the internet. The experts stress that it would be very useful to provide students with Wi-Fi access because this way students can reach journals, software downloads, and educational information without restrictions. This reduces dependence on personal mobile data or off-campus networks, promoting equity among students. Moreover, students see reliable, campus-wide connectivity as a modern and convenient amenity, increasing overall satisfaction and engagement.

The West Caspian University Technopark was established at the beginning of the 2017-2018 academic year. Its main purpose is to transform the scientific and experimental work of WCU's students and academic staff into real, usable technologies — i.e., to support research, innovation, and commercialization of ideas.

The Technopark encourages innovation and entrepreneurship: from early-stage ideas to prototypes, startups, and possible market-ready products. It supports student and staff research and helps align it with real-world industry demands — bridging academia with business/industry needs. To this end, Technopark is involved in a variety of student-led projects and startups: robotics modules, environmental monitoring devices, AI and automation prototypes, etc.

Seminars and trainings are held to promote the concept of initiative among students, to support realizing of students' social, business and educational ideas. Technopark also provides technical and organizational support to many competitions. For example, the organization supported the "Game Jam" hackathon competition, which was held for the first time in Azerbaijan, and as a part of the competition, students were trained in 3D Game development

The experts appreciate that WCU Technopark gives students — especially those studying engineering, mechatronics, robotics, and related fields — hands-on experience designing and building real devices, working on prototypes, and potentially launching startups. It helps translate academic knowledge into real-world applications and provides a bridge between university education and industry or entrepreneurial activity.

During the audit, the experts visit the facilities and especially the laboratories in the School of High Technologies and Innovative Engineering. In general, the laboratories are functional for the purposes of the programmes and there are no severe bottlenecks due to missing equipment or a lacking infrastructure. This impression is confirmed by the students as well as the teachers who express their satisfaction with the facilities and technical equipment.

The experts praise the excellent equipment in the laboratories regarding basic training and practical education in the computer-science-related programmes (Ba Computer Engineering, Ba Computer Science, Ba Information Security and Ba Information Technology). WCU provides the students with a solid and profound lab environment in which the students are not only given the opportunity to work in small teams or even individually, i.e. with intensive supervision from the lecturers, but the hardware required for a solid foundation is also available in sufficiently high quantities (e.g. computers and electronics kits – such as Arduino kits – or LEGO Mindstorms kits for training in the sensor and IoT fields). This creates not only a motivating working atmosphere, but also intensive, individualized training for each student. The four CS and IT programmes are characterised by application-oriented research with a regional focus. The laboratories are adequately equipped with computers. Hardware-level programming of microcontrollers and sensors is very well supported by the laboratory equipment.

However, the laboratory equipment for the two engineering programmes is currently insufficient. For electronics engineers, sufficient measuring equipment and materials for practical learning should be available. A basic electrical engineering laboratory should be suitable for more demanding experiments and should therefore include a wide range of instruments and techniques. For example, the use of oscilloscopes and function generators for creating Lissajous curves, the use of watt-meters alongside ammeters and voltmeters for direct power measurements, and the teaching of an understanding of various voltage measurements. Furthermore, the experiments could include the investigation of phase differences in AC circuits, the comparison of single-phase and three-phase systems, phasors, impedance, capacitance, inductance, and power loss, as well as measurement techniques such as the Wheatstone bridge for resistance measurement and AC bridges for impedance analysis. Students should have the opportunity to practice and apply the programming of modern motor controllers, utilize modern power electronics, for example, with integrated power distribution modules (IGPTs), and acquire equipment for frequency and power measurement as well as for determining motor characteristics. In mechanics, the laboratory equipment should be designed so that students can work directly on machines such as lathes and milling machines to test the practical feasibility of their designs and to gain fundamental experience with manufacturing parameters, such as cutting speeds. Small machines are perfectly adequate for this purpose.

The experts think it is worth mentioning that access to the facilities of the School High Technologies and Innovative Engineering is not barrier-free inside. The five or six steps at the entrance of the buildings cannot be bypassed by a ramp, as there is none. The metal rails attached to the side of the stairs are much too steep. The ideal solution would be to install a ramp, or at least a handrail next to the steps.

The university library offers access to both physical as well as digital resources and provides study spaces and relevant hardware for study purposes, including PCs and copying machines. According to the Self-Assessment Report, the collection includes roughly 35,000 printed books, more than 10,000 periodicals and other publications, 15,000 electronic books, and over 810,000 online books. Full access to the following databases is granted: Perlego, ScienceDirect, Scopus, Web of Science, Directory of Open Access Journals, Directory of Open Access Books, Elgar Online, EBSCO Open Dissertations, Core, PubMed, WIPO, Paperity. All resources can be accessed via the university's online library catalogue. Similarly, the university employs an online platform for the distribution of the syllabi, course information, and literature access. WCU takes part in a project under the administration of the International Federation of Library Associations and Institutions to further internationalise the library. The students confirm their satisfaction with the library and digital facilities of the university, and the experts also positively comment on the library and its resources.

During the audit, the students express their general satisfaction with the available resources and conditions of studying, thereby confirming the positive impression of the expert group. The students also express their satisfaction with the library and the available literature there. Remote access via VPN is possible and WCU offers access to several scientific digital databases and students can access current scientific papers, e-books, and papers.

In summary, the expert group judges the available funds, the technical equipment, and the infrastructure (laboratories, library, seminar rooms etc.) to comply – besides the mentioned restrictions – with the requirements for adequately sustaining the degree programmes.

**Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 3:**

The experts thank WCU for explaining that the university publishes 12 scientific journals to ensure the dissemination of scientific results. These journals cover various scientific fields and serve as academic platforms for publishing both local and international research result. The experts observe that teaching is dominant in the six programmes under review and that the respective teachers have hardly any scientific publications in renowned international journals. This could be improved.

The experts are glad that WCU has realised the need to improve the laboratory equipment for the two engineering programmes. In response to the experts' comments with respect to the insufficient measuring equipment and materials for teaching electronics, new devices have been purchased and installed in the "Physics and Electronics" laboratory. This includes oscilloscopes for generating Lissajous curves; a function generator; wattmeter, Wheatstone bridge, resistor set, potentiometer sets, breadboard kit, jumper set; impedance analysers; LCR meters; vector network analysers; AC bridges, Maxwell bridge, Schering bridge, and Hay bridge. The experts are satisfied with the improvements.

With respect to internet-access, the experts point out that it would be useful to provide eduroam on the whole campus.

The experts consider criterion 3 to be mostly fulfilled.

## 4. Transparency and documentation

|                                          |
|------------------------------------------|
| <b>Criterion 4.1 Module descriptions</b> |
|------------------------------------------|

**Evidence:**

- Self-Assessment Reports
- Module descriptions
- Homepage WCU: <https://wcu.edu.az/en>
- Homepage School of-High-Technologies and Innovative-Engineering  
<https://wcu.edu.az/en/faculties/School-of-High-Technologies-and-Innovative-Engineering>
- Homepage Ba Computer Engineering: <https://wcu.edu.az/en/faculties/computer-engineering>
- Homepage Ba Computer Science: <https://wcu.edu.az/en/faculties/computer-science-id-978>
- Homepage Ba Device Engineering: <https://wcu.edu.az/en/faculties/instrumentmaking-engineering>
- Homepage Ba Information Security: <https://wcu.edu.az/en/faculties/information-security-id-515>
- Homepage Ba Information Technology: <https://wcu.edu.az/en/faculties/information-technologies>

- Homepage Ba Mechatronic and Robotics Engineering: <https://wcu.edu.az/en/faculties/engineering-of-electronics-telecommunications-and-radio>
- Discussions during the audit

**Preliminary assessment and analysis of the experts:**

After studying the module descriptions of all programmes under review, the experts confirm that the module descriptions include most of the necessary information about the respective module such as, module title, persons responsible for the module, teaching methods, awarded credits and students' work load, learning outcomes, content, admission and examination requirements, forms of exams, and recommended literature.

However, the experts point out that the module descriptions need to be updated with respect to the students' workload calculation as it must be transparent how the students' total workload is calculated and it needs to be verified with the students (see criterion 1.5).

Additionally, the course learning outcomes should be based on an internationally based taxonomy like Bloom's Taxonomy. This is useful, because a taxonomy provides a structured hierarchy that helps teachers to define what students are expected to know, understand, or be able to do at the end of a course. This reduces ambiguity and ensures learning outcomes are measurable. Using a widely accepted taxonomy allows universities to compare learning outcomes across programmes and institutions globally, facilitating student mobility, credit recognition, and alignment with international standards (e.g. Bologna Process).

|                                                     |
|-----------------------------------------------------|
| <b>Criterion 4.2 Diploma and Diploma Supplement</b> |
|-----------------------------------------------------|

**Evidence:**

- Self-Assessment Report
- Sample Transcript of Records for each degree programme
- Sample Diploma Certificate for each degree programme

**Preliminary assessment and analysis of the experts:**

The experts confirm that the students of the six undergraduate programmes under review receive a Diploma Certificate and a Transcript of Records. No sample Diploma Supplements were submitted.

The Diploma Supplement should follow the internationally recognised European template and should inform about the structure and content of the respective degree programme. Additionally, it should provide information about the individual performance as well as statistical data regarding the final grade and include information about the

composition of the final grade according to the ECTS-Users' guide. This allows the reader to categorise the individual result. A programme specific Diploma Supplement needs to be issued automatically to all graduates.

The experts ask WCU to submit a sample Diploma Supplement, which is aligned with the European template, for each of the six undergraduate programmes.

|                                     |
|-------------------------------------|
| <b>Criterion 4.3 Relevant rules</b> |
|-------------------------------------|

**Evidence:**

- Self-Assessment Report
- All relevant regulations as published on the university's webpage

**Preliminary assessment and analysis of the experts:**

The experts confirm that the rights and duties of both WCU and the students are clearly defined and binding. All rules and regulations are published on the university's website and the students receive the relevant course material at the beginning of each semester. This includes a syllabus and exam schedule.

**Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 4:**

The experts emphasise that the module descriptions need to be updated with respect to the students' total workload and the awarded ECTS points. Additionally, the module descriptions should be accessible for all stakeholders, e.g. by publishing them on the programmes' webpage. The experts expect that WCU submits the updated module descriptions in the further course of the procedure.

The experts thank WCU for submitting sample Diploma Supplements and confirm that the documents are aligned with the European template and include all required information.

The experts consider criterion 4 to be mostly fulfilled.

## 5. Quality management: quality assessment and development

### **Evidence:**

- Self-Assessment Report
- WCU Academic Policy
- Sample surveys and reports
- Discussions during the audit

### **Preliminary assessment and analysis of the experts:**

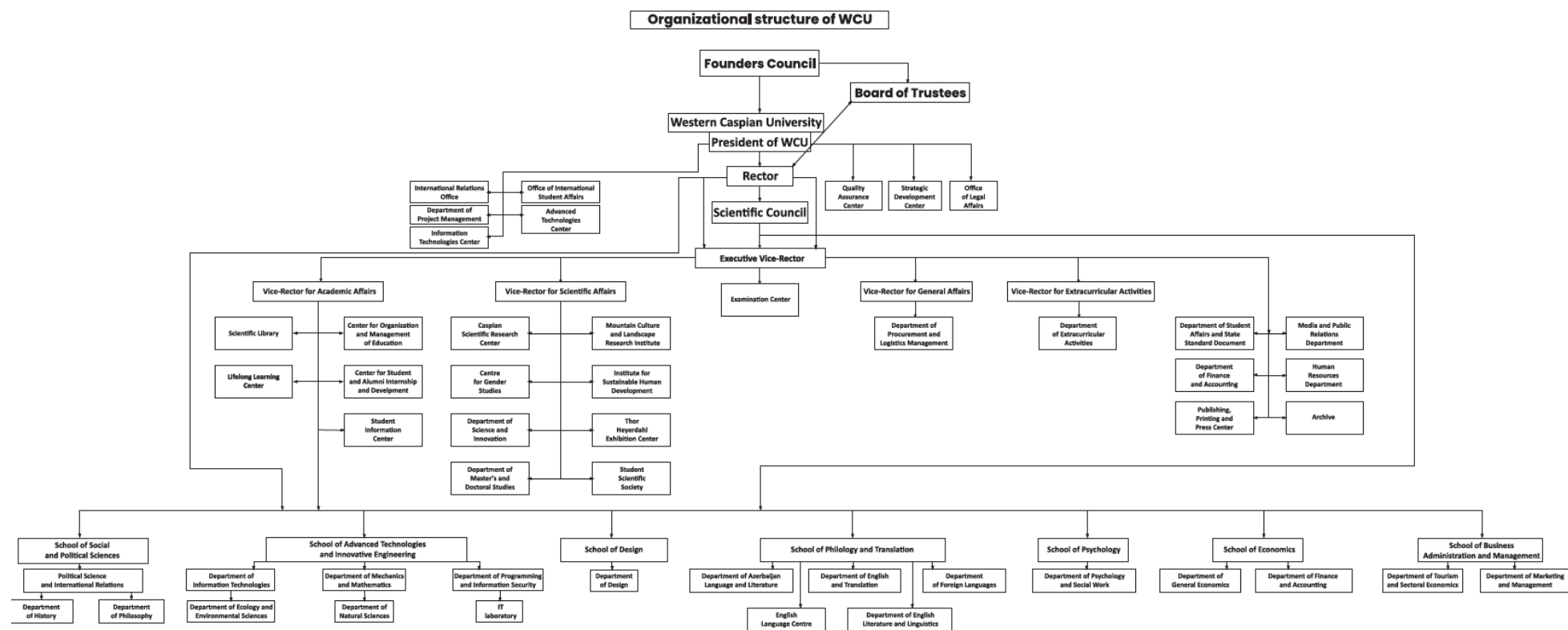
The top governing bodies of WCU include a Board of Founders, a Board of Trustees, and a Scientific Council these bodies play a role in strategic decisions, oversight, and academic governance. The Founders' Council is formally the supreme body in matters of university ownership, economic activity, structure, and appointment of senior personnel (e.g., top leadership). It approves the charters, regulations, and the structure of several other governance organs — for example, the rules for the Board of Trustees and the Scientific Council. The Board of Trustees is an advisory body that connects the university with society, industry, and the public. It offers strategic guidance but it does not run daily academic or administrative operations, which are handled by the Rectorate and the academic bodies.

The Scientific Council (also called the Academic Council) of WCU is the highest academic governing body of the university. Its function is to regulate, decide, and supervise all academic and scientific matters. To this end, it approves and oversees educational policies, academic regulations, and internal academic rules to ensure compliance with national higher-education standards and institutional quality requirements. Additionally, it reviews and approves new degree programmes and specializations, curricula, course structures, and learning outcomes. Moreover, the Scientific Council defines priorities for scientific research and innovation and reviews research plans, projects, publications, and conferences. Finally, it is responsible for academic staff matters, quality assurance, and student-related academic decisions. Besides the Rector, the Vice-Rector, Deans, and selected teachers also students representatives are members of the Scientific Council. They are nominated by the Student Youth Organization (SYO).

The Rector is the chief executive of daily operations and academic leadership. Under the Rector there are five Vice-Rectors each responsible for major functional areas. WCU has seven Schools (Faculties) each with several departments. For example, the School of Advanced Technologies and Innovative Engineering, which offers the six undergraduate programmes under review, has five departments: Department of Information Technologies,

Department of Ecology and Environmental Sciences, Department of Mechanics and Mathematics, Department of Natural Sciences, and Department of Programming and Information Security. Beyond academic units, WCU has a number of centres and administrative departments that support education delivery, research, student services, and institutional management.

The organisational structure of WCU is shown in the following diagram:



WCU's quality assurance system is designed and implemented by the Quality Assurance Centre. The quality development goals are defined in the university's strategic plan and operationalised on the level of different structural units (schools and departments) via the action plan, both of which are published on the university's website.

The university's quality management system includes elements of both internal as well as external quality assurance. The Quality Assurance Centre employs multiple online survey instruments directed at students, teaching staff, and industry partners respectively graduates, and encompass different topics among others general satisfaction, the learning quality and examination system, as well as the support system, as explained in previous sections of this report. The satisfaction surveys are conducted anonymously through WCU's digital platform "Hemis". The questionnaires are distributed and evaluated at the end of the semester. With 12 questions, the students are asked to give their feedback on the teaching content, communication, laboratory work, etc. Participation is not compulsory, but students are encouraged by their teachers and academic advisors to participate at the surveys and to give their feedback. Examples of the survey questionnaires were presented to the experts and the results of the surveys are published online.

Also, looking at the sample survey questionnaires, the experts note that the "Student Feedback and Course Evaluation Questionnaire" includes only general questions about students' satisfaction with the quality of teaching and the course, however, the questionnaire is not conducted course by course, but students have to mention the name of the respective teacher. Most importantly, the questionnaire does not include any open questions and the students are not asked to explain the reasons for their possible dissatisfaction with certain topics. Questions about students' workload are also not included (see criterion 1.5).

This problem of generalisation affects also the usability of the results of the learning and teaching quality evaluations. While it is consoling to know that the students are generally satisfied with their learning experience in their programmes, the results may vary for the individual courses. This constitutes the level at which gradual but significant improvement can be implemented. Additionally, students' satisfaction questionnaires should include open questions because they capture insights that fixed-choice questions alone cannot provide and allow students to explain why they are satisfied or dissatisfied, giving context that numerical ratings cannot display. Closed questions only measure what designers anticipate, while open responses can reveal problems, strengths, or suggestions that were not previously considered. Students often propose concrete ideas for improving course content, teaching methods, assessment, or organization, which are especially valuable for quality enhancement. When a score is unusually high or low, open comments help interpret the data and avoid incorrect conclusions based solely on averages. Open questions signal that

students' individual experiences matter, which can increase their sense of involvement and trust in the evaluation process.

As another issue, the experts point out that the reports on the results of the satisfaction questionnaires, which are published on WCU's webpage, do not include any follow up how the identified problems can be solved and the quality of teaching and other academic aspects are not discussed at all. Reports on the results of students' satisfaction questionnaires should include an action plan because simply presenting data is not enough to improve teaching quality. It needs to be ensured that students' feedback leads to concrete, accountable improvement, which specify what steps will be taken in response to identified issues, turning insights into practical changes rather than leaving problems unaddressed. When staff and students see concrete plans based on students' feedback, it fosters collaboration and shared responsibility for enhancing the learning environment.

Therefore, the experts expect WCU improve the internal quality assurance system and redesign the students' satisfaction questionnaires and the respective reports. There should be a comprehensive satisfaction survey for students with open questions conducted on the level of the individual courses. Additionally, it is necessary to assess the students' total workload per module to corroborate whether the designated workload is adequate. Regularly monitoring and evaluating student workload helps identify discrepancies between the estimated and actual workload experienced by students. This feedback loop allows institutions to adjust course design, teaching methods, and assessment strategies to better match the intended learning outcomes with the actual effort required. Such alignment is essential for quality assurance, ensuring that courses are neither overloaded nor under-demanding, and that students are not unfairly burdened or under-challenged.

The experts notice positively that students are members of the Scientific Council of WCU. The council is composed not only of administrative and academic staff but also includes student representation, ensuring that students have a voice in the university's governance and decision-making processes. However, the provided documents do not make transparent that there is also a Scientific Council on School/Faculty level. No information about its members or tasks can be found on WCU's webpage or in the provided evidences. This should be changed as it needs to be clear how the decision making processes at WCU are organised and what boards are involved in the processes. To this end, it would be useful to make the internal quality processes transparent to all stakeholders and document how students' feedback is handled and how improvements and changes are initiated and implemented.

WCU has a strong connection with the industry. Every undergraduate programme includes an internship, and students find it relevant and practical. Employers and alumni also give

regular feedback to departments which helps to improve the curricula. According to the feedback from employers, they are happy with the graduate profile of the programmes and they often hire students after internships.

The experts discuss with the representatives of WCU's partners from private companies if there are regular meetings with the partners, where they discuss the needs and requirements of the employers and possible changes to the degree programmes. They learn that some employers and alumni are invited to give their feedback on the content of the degree programmes. Additionally, employers are members of the boards at WCU. The experts appreciate that WCU stays in contact with its alumni and has a close relation with its partners from the industry.

In summary, the expert group confirms that the quality management system is suitable to identify weaknesses and to improve the degree programmes. However, there is still room for improvement. The satisfaction questionnaires and the respective reports should be re-designed.

**Final assessment of the experts after the comment of the Higher Education Institution regarding criterion 5:**

The experts confirm that WCU has added information about members of the Academic Council on the university's website and attached relevant documents to the additional documents folder. However, the experts emphasise that it would be useful to make the internal quality processes transparent to all stakeholders and to document how students' feedback is handled and how improvements and changes are initiated and implemented. Moreover, it is necessary to improve the internal quality assurance system and to redesign the satisfaction questionnaires (include open and course specific questions) and the respective reports (draft follow up measures/action plan).

The experts consider criterion 5 to be mostly fulfilled.

## E Additional Documents

Before preparing their final assessment, the panel asks that the following missing or unclear information be provided together with the comment of the Higher Education Institution on the previous chapters of this report:

- none

## **F Comment of the Higher Education Institution (18.02.2026)**

WCU provides the following statement:

### **Recommendation: Criterion 1.3 Curriculum**

Regular Review of Curricula

#### **Response:**

At the University, the process of regular review of curricula is implemented systematically in accordance with the state standards of higher education and the University's internal regulatory documents. Within this framework, decisions are made by taking into account the objectives of educational programmes, labour market requirements, and the input of stakeholders, particularly students' written applications and petitions. Students' submissions and the relevant meeting minutes constitute supporting documentation for curriculum updates and are hereby provided.

In order to ensure more active and structured participation of programme coordinators in the stages of curriculum revision, programme coordinators now participate as members of curriculum development commissions based on a decision of the Academic Council.

### **Recommendation: Criterion 1.3 Curriculum**

Programme coordinators should be granted greater autonomy in revising study plans and designing specialization courses to enhance academic flexibility and responsiveness to stakeholder needs.

#### **Response:**

Taking into consideration the experts' recommendation to strengthen the role of programme coordinators in the development and revision of study plans, decision-making mechanisms in this area have been improved. In this regard, it is planned to improve internal academic management procedures, systematically consider coordinators' initiatives, and strengthen their role within the framework of elective course blocks. The objective is to ensure that, while maintaining compliance with the existing regulatory framework, programs are developed in a more flexible manner and can respond promptly to labor market demands.

**Recommendation: Criterion 1.3 Curriculum**

However, the experts observe that WCU issues no guideline for the hosting institution on conducting the internship/final project.

**Response:**

The University has established methodological guidelines and relevant program documents governing the organization and implementation of internships and final projects. These documents are formally in place and operational. The respective program documentation has been submitted to the expert panel as supplementary material (additional documents folder – Internship Guidelines).

**Recommendation: Criterion 1.3 Curriculum**

The curriculum of the Mechatronics and Robotics Engineering programme should include compulsory foundational courses in electrical and mechanical engineering, reflecting the integrative nature of mechatronics.

**Response:**

In response to the expert recommendation, all undergraduate programs at Western Caspian University have been structured in accordance with the normative and legal requirements of the Republic of Azerbaijan and approved by the Ministry of Education. Compulsory course blocks have been maintained, while elective course blocks have been enriched.

Recommendations regarding electrical engineering (DC and AC networks, passive and active components), circuit and control engineering, and mechanical and design engineering for the Mechatronics and Robotics Engineering program have been considered, the elective course content updated, and the curriculum aligned with labor market needs and international best practices.

**Recommendation: Criterion 1.3 Curriculum**

The module “Internship” could be restructured into two separate courses: (1) an Internship course, as currently implemented, and (2) a distinct Bachelor’s Thesis course offered independently.

**Response:**

At Western Caspian University, bachelor-level projects and final theses are integrated within the framework of industrial training. This approach enables students to develop professional competencies—such as teamwork, communication, and problem-solving—while also incorporating an applied research component. In this way, students are systematically

involved in research activities, ensuring alignment between teaching and practice-oriented research.

Although the “Industrial Training” module could be divided into two separate courses (Industrial Training and a distinct Bachelor’s Thesis), the University currently implements a phased structure within the existing curriculum. Students build academic and soft skills in the first year, gain field-specific practical competencies in the second and third years, and, from the second semester of the fourth year, undertake industrial training that also provides the foundation for the bachelor’s thesis.

This integrated and phased model has proven effective in supporting the development of both professional and research skills and will therefore be continued.

### **Criterion 1.3 Curriculum**

Finally, experts observe that the currently teachers at WCU have no real opportunity to conduct a sabbatical. The experts emphasise that giving faculty members the chance to take a sabbatical is one of the most reliable ways how a university can increase its research output and quality. During normal semesters, faculty are occupied with teaching, grading, meetings, advising, and administration. Sabbaticals enable teachers to concentrate on their research activities and to collaborate with their international partners. This fosters creative intellectual work, which may result in co-authored papers and joint grant applications. Thus, research output increases not just in volume, but in visibility and impact. This improves the university’s reputation, rankings, and ability to attract funding and strong graduate students. A sabbatical is a strategic investment that trades short-term teaching coverage for long-term gains in research productivity, quality, reputation, and funding.

#### **Response:**

WCU highly appreciates the recommendation of the ASIIN experts regarding the implementation of a sabbatical mechanism and recognizes it as a vital strategic direction for strengthening the university's scientific potential. The university leadership considers that a sabbatical program is not only a tool for individual scientific development but also an effective institutional mechanism that enhances research productivity, fosters international collaboration, and bolsters academic reputation.

Within the framework of WCU’s Strategic Development Plan for 2026–2030, the formulation and phased implementation of a sabbatical policy are envisioned. The core principles of this policy are defined as the establishment of transparent selection criteria based on

academic indicators, the result-oriented evaluation of scientific activity, the maintenance of a balance between teaching and research responsibilities, and the assurance of financial and institutional sustainability.

In the initial phase, the implementation of a pilot-based model is planned, creating a limited number of research leave opportunities for academic staff with high scientific performance indicators. During the sabbatical period, priority will be given to publishing in internationally indexed journals, conducting joint research with foreign partners, and developing grant projects. Simultaneously, to ensure the continuity of the educational process, options for workload optimization and the implementation of alternative teaching mechanisms where necessary will be evaluated.

Despite short-term organizational challenges, the university views the sabbatical mechanism as a strategic investment aimed at enhancing long-term scientific productivity, research quality, and institutional reputation. This initiative will be implemented in a phased manner within the framework of financial planning.

WCU leadership regards the sabbatical policy not merely as a planned program, but as a core strategic commitment toward the university's scientific advancement and international reputation. To this end, all administrative structures, faculty heads, and academic staff demonstrate full dedication. WCU values the recommendation of the ASIIN experts as a vital direction for institutional growth and commits to the continuous strengthening of the scientific environment in accordance with international quality assurance principles.

#### **Recommendation: Criterion 1.4 – Admission Requirements**

Unfortunately, many students do not fully understand the importance of certain specialised programmes, such as Mechatronics and Robotics Engineering.

##### **Response:**

Observations indicate that for newly introduced specialised programmes, particularly the Mechatronics and Robotics Engineering programme, students' awareness of programme content and application areas is still in the process of formation at the initial stage. One of the factors explaining this situation is that, during the experts' evaluation period, only the first year and the first semester of programme delivery had been implemented.

In line with the experts' recommendations, it is planned to place special emphasis on these programmes within the activities of applicant advisory centres in order to increase awareness among prospective applicants and enrolled students. Systematic information activities regarding programme content and career prospects, including open days and promotional

meetings held at general education institutions, have been incorporated into the activity plan of these centres.

**Recommendation: Criterion 1.4 – Admission Requirements**

WCU should closely coordinate with the Ministry of Education to ensure full allocation of admission places for the Mechatronics and Robotics Engineering programme in future academic years.

**Response:**

In this regard, Western Caspian University plans to enhance the promotion of its programs, provide clearer information on career opportunities, strengthen collaboration with industry partners, and increase awareness-raising activities. The aim is to ensure that prospective students and their parents obtain comprehensive information about program content, prospects, and real labor market opportunities.

In this context, relevant measures have also been incorporated into the activity plan of the University's Student Support Center. Through the Student Support Center, programs will be presented to prospective and current students, new specialties will be introduced, open days will be organized, and informational sessions will be conducted in general education institutions. These activities are intended to increase students' awareness of the programs and support their future career choices.

Thus, the University intends to implement systematic measures both to increase enrollment rates and to more effectively communicate the strategic importance of its programs to society.

**Recommendation: Criterion 1.5 – Workload and Credits**

During discussions with students, experts considered the overall workload to be adequate; however, they emphasised that WCU should verify the alignment of students' actual workload with the allocated credit points.

**Response:**

At Western Caspian University, the alignment between students' actual workload and allocated credits is systematically monitored within the framework of internal quality assurance mechanisms. In the development of study plans, students' individual study plans, the academic calendar, and existing regulatory requirements are taken as the basis.

According to the "Rules for the Organisation of Credit-Based Education in Higher Education Institutions," approved by Resolution No. 348 of the Cabinet of Ministers of the Republic of Azerbaijan dated 24 December 2013, a total weekly workload of 45 hours is defined for

students, and credit allocation is carried out within this framework. This approach fully complies with the workload-based credit allocation principles of the ECTS system and is ensured through the application of ECTS methodology. Where necessary, changes are made based on recommendations and are approved by a decision of the Academic Council. (<https://e-qanun.az/framework/27030>)

**Recommendation: Criterion 1.5 Workload and credits**

WCU should comply with the ECTS Users' Guide in determining students' total workload. As stated in the Guide, workload calculation should cover all learning activities.

**Response:**

At Western Caspian University, the determination of students' total workload is based on the methodological approach of the ECTS Users' Guide, and workload calculation is not limited to contact hours. Within this framework, all learning activities are taken into account, including lectures and practical classes, independent study, projects and assignments, as well as preparation for assessment.

In course syllabi, the workload allocated to each learning activity is specified separately, and these indicators are regularly analysed based on students' actual experience. The results of the analysis are discussed at both course and programme levels and are used as a basis for making adjustments to workload distribution where necessary.

To ensure accessibility of information for students and other stakeholders, study plans, course syllabi, and the academic calendar are published openly on the University's official website. (<https://www.wcu.edu.az/az/faculties>)

**Recommendation: Criterion 1.5 Workload and credits**

This information should be clearly and transparently reflected in module descriptions and study plans.

**Response:**

Taking the experts' recommendation into account, Western Caspian University has ensured that information on students' workload and ECTS credits is presented more clearly and systematically in module descriptions and study plans. For each module, contact and non-contact learning activities (lectures, practical/laboratory classes, independent study, projects, assessment tasks, and examination preparation), along with the corresponding time allocation and ECTS credits, are explicitly indicated.

Study plans and module descriptions are also published on the University's official website, ensuring accessibility for students and other stakeholders.

**Recommendation: Criterion 2. Exams: System, concept, and organisation**

However, based on students' feedback, more group work and presentations should be included in the assessment process. At the same time, students express a preference for project-based assessments instead of written final exams.

**Response:**

The proposals put forward by students have been reviewed within the framework of existing normative-legal documents and the current regulations related to assessment. In order to improve the assessment process, the possibilities of integrating group work, presentations, and project-based assignments into the teaching process will be evaluated, taking the relevant regulations into account. At the same time, when applying final assessment formats, compliance with the requirements of educational programs and the standards set by the Ministry of Education will be ensured.

**Recommendation: Criterion 3.1 Personnel (Academic Staff) and Development**

The number of scientific publications by WCU faculty in prestigious international journals is insufficient.

**Response:**

Western Caspian University has achieved significant milestones in recent years toward strengthening its scientific activities and integrating into the international scientific arena. Particularly since 2023, the systematic implementation of the university's internationalization strategy has played a decisive role in the growth of scientific indicators. As a result of targeted reforms, the quality and scope of scientific research have expanded, and the number of publications indexed in international scientific databases such as Scopus and Web of Science has significantly increased. This reflects the active participation of WCU scholars in the global scientific environment and the rising academic prestige of the university.

The establishment of new laboratories equipped with modern technology has opened extensive opportunities for conducting fundamental and applied research, as well as for shaping the scientific skills of young researchers and doctoral students. Simultaneously, the launch of international scientific centers at the university has facilitated the execution of joint multidisciplinary research programs with foreign universities and research institutes,

the preparation of co-authored publications, and the implementation of scientific seminars and exchange programs.

Since 2023, the formation of joint research groups, international trainings, summer schools, block-format and semester-long courses, as well as scientific conferences and symposia, have accelerated the exchange of scientific knowledge and stimulated the professional development of the academic staff and young researchers. Furthermore, involving internationally renowned scholars in the teaching process has significantly contributed to aligning the educational content with international standards.

To ensure the dissemination of scientific results, Western Caspian University publishes 12 scientific journals. These journals cover various scientific fields and serve as academic platforms for publishing both local and international research. The involvement of prestigious foreign scholars as editors and reviewers enhances the scientific quality and compliance of these publications with international standards. The peer-review mechanism serves to elevate the scientific level of the journals, encourage the publishing activity of young researchers, and strengthen the university's scientific reputation.

As a result of all these activities, the number and quality indicators of articles published by university staff in local and international scientific journals have increased, further solidifying Western Caspian University's visibility in scientific databases and its position as a competitive higher education institution.

Statistical data demonstrates an increasing trend in the number of scientific publications by the WCU academic staff in scientific databases (Scopus, Web of Science). Analyzing the Scopus database numerically, it is evident that the highest article activity is concentrated within the departments of "Information Technology" and "Mechanics and Mathematics." According to general metrics as of today (January 28, 2026), out of a total of 3,418 articles, 814 belong to Engineering, 391 to Computer Science, 658 to Materials Science, 704 to Physics, and 322 to Mathematics.

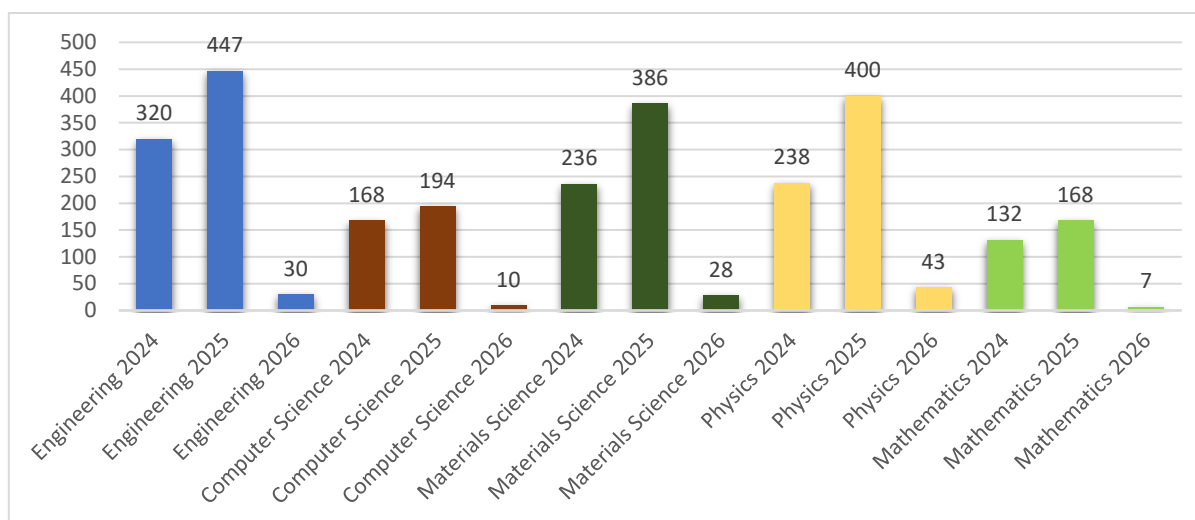
Comparing recent years, the total number of articles from WCU in 2024 was 1,215, of which 320 were in Engineering, 168 in Computer Science, 236 in Materials Science, 238 in Physics, and 132 in Mathematics.

In 2025, these figures rose to a total of 1,971, with 447 articles in Engineering, 194 in Computer Science, 368 in Materials Science, 400 in Physics, and 168 in Mathematics.

Despite 2026 having just begun, several articles have already been published in these fields: Engineering – 30, Computer Science – 10, Materials Science – 28, Physics – 43, and Mathematics – 7.

<https://www.scopus.com/pages/organization/60190589>

### WCU Publication Statistics by "Information Technology" and "Mechanics and Mathematics" Departments (2024–2026)



Note: Attachment (Scopus - Analyze search results, 1 page)

#### Recommendation: Criterion 3.2 Funds and equipment

However, the laboratory equipment for the two engineering programmes is currently insufficient. For electronics engineers, sufficient measuring equipment and materials for practical learning should be available. A basic electrical engineering laboratory should be suitable for more demanding experiments and should therefore include a wide range of instruments and techniques. For example, the use of oscilloscopes and function generators for creating Lissajous curves, the use of watt-meters alongside ammeters and voltmeters for direct power measurements, and the teaching of an understanding of various voltage measurements. Furthermore, the experiments could include the investigation of phase differences in AC circuits, the comparison of single-phase and three-phase systems, phasors, impedance, capacitance, inductance, and power loss, as well as measurement techniques such as the Wheatstone bridge for resistance measurement and AC bridges for impedance analysis. Students should have the opportunity to practice and apply the programming of modern motor controllers, utilize modern power electronics, for example, with integrated power distribution modules (IGPTs), and acquire equipment for frequency and power measurement as well as for determining motor characteristics.

#### Response:

A modern and fully equipped laboratory plays a decisive role in the development of the "Mechatronics and Robotics" specialty. Such a laboratory allows students to integrate theoretical knowledge with practical skills. Thus, future graduates hold a more advantageous position in the labor market and are able to participate in international projects.

In response to your recommendations regarding the current shortage of laboratory equipment for the two engineering programs, as well as the insufficient measuring equipment and materials for teaching electronics, the devices listed below have been purchased and installed in the "Physics and Electronics" laboratory.

1. Oscilloscopes for generating Lissajous curves;
2. Function generator;
3. Wattmeter – used for power measurement;
4. Wheatstone bridge, resistor set, potentiometer sets, breadboard kit, jumper set;
5. The most essential devices for impedance analysis and measurements related to AC bridges. Impedance analyzers;
6. LCR meters;
7. Vector network analyzers;
8. AC Bridges (AC Bridges), Maxwell bridge, Schering bridge, Hay bridge.

Photos are added to the additional documents folder.

#### **Recommendation: Criterion 3.2 Funds and equipment**

Experts emphasize that providing students with Wi-Fi access would be highly beneficial, as it would allow students unrestricted access to journals, software downloads, and educational information.

#### **Response:**

In order to ensure students' access to the Internet, the use of an Education Roaming (eduroam) type Internet access system is implemented at WCU.

#### **Recommendation: Criterion 4.1 Module descriptions**

Ensure that all course syllabi follow a standardized format, clearly present and verify student workload calculations, and define learning outcomes in line with Bloom's Taxonomy and the Bologna Process.

**Response:**

In response to the experts' comment, we confirm that for all programmes under review, course syllabi are prepared and delivered in this format in accordance with existing requirements.

The calculation of students' workload is clearly presented in the syllabi and discussed and confirmed with students. Course learning outcomes are formulated based on Bloom's Taxonomy and are aligned with the principles of the Bologna Process.

**Recommendation: Criterion 4.2: Diploma and Diploma Supplement**

Experts confirm that students of the six revised bachelor's programs receive a Diploma Certificate and an Academic Transcript. However, samples of the Diploma Supplements were not provided.

The Diploma Supplement should comply with the internationally recognized European template and provide information on the structure and content of the relevant degree program. In addition, it should include individual performance indicators as well as statistical information on final grades and details on the composition of the final grade in accordance with the ECTS Users' Guide. This allows the reader to categorize individual results. A program-specific Diploma Supplement should be automatically issued to all graduates.

**Response:**

Students who have completed the educational program, that is, have accumulated 240 credits, including completion of internships, are awarded a diploma and a diploma supplement in accordance with the state standards of the Republic of Azerbaijan <https://wcu.edu.az/uploads/files/Diploma%20and%20supplement%20%283%29%20%282%29.pdf>

The forms are filled out in Azerbaijani.

The Diploma Supplement is provided. This document includes information about the university, the courses studied, their credits, grades, and the grade point average (GPA, referred to in Azerbaijani as ÜOMQ). In the report submitted to you, samples of bachelor's and master's diplomas are presented in the "Self-Assessment" folder No. 21 titled "Graduation Certificates."

Based on the recommendation of the expert group for the current academic year, the university has prepared a Diploma Supplement in accordance with the internationally recognized European template (sample attached), and this year our graduates will be awarded diplomas in compliance with both the national standards and the international template.

**Recommendation Criterion 5. Quality management: quality assessment and development**

However, the provided documents do not make transparent that there is also a Scientific Council on School/Faculty level. No information about its members or tasks can be found on WCU's webpage or in the provided evidences. This should be changed as it needs to be clear how the decision making processes at WCU are organised and what boards are involved in the processes. To this end, it would be useful to make the internal quality processes transparent to all stakeholders and document how students' feedback is handled and how improvements and changes are initiated and implemented.

**Response:**

Considering experts' recommendation, we added information about members and action plan of Academic Council on the university's website and attached relevant documents to the additional documents folder.

Decision-making processes at Western Caspian University are organized within a structured and participatory mechanism based on principles of institutional governance, including student feedback. Authority is distributed across strategic, academic, and administrative levels, and these processes are regulated by the University's internal regulatory documents. Strategic and academic decision-making is carried out by the Faculty Academic Councils, the Teaching and Methodological Council, the University Academic Council, and the Quality Assurance Commission, in accordance with internal regulations. There is a clear functional division among these councils, and the participation of faculties, administrative units, academic staff, and student representatives is ensured during the formulation of decisions. The Board of Founders participates in joint discussions with the Academic Council during the adoption of relevant decisions, on the basis of which decisions are made, approved, and implemented.

Decisions related to teaching, research activities, and governance matters (such as the opening of new academic programs, the introduction of new regulations, amendments to existing rules, etc.) are made on the basis of the collection and analysis of information and documentation (regulatory documents, statistical data, expert opinions, etc.). Decisions are discussed at the relevant departments, at the Faculty Academic Councils, and the opinions of the Student Union are also taken into account. Alternative options are

evaluated through analysis of advantages and risks, as well as consideration of academic and social impacts. Decisions are formally approved by official orders of the Rector or the Executive Vice-Rector. The decisions are implemented, and appropriate monitoring and evaluation are conducted.

Within the framework of the internal quality assurance system, transparency is recognized as a fundamental principle for all stakeholders. Student feedback is collected through regular surveys, focus groups (usually consisting of 6–12 participants), academic advisor meetings, and electronic application mechanisms. The feedback and proposals obtained are systematically analyzed by the Quality Assurance Center, submitted to the relevant structural units, and integrated into decision-making processes.

Improvement and change initiatives are primarily launched on the basis of the results of these analyses, discussed in the relevant councils, and, once approved, proceed to the implementation stage. The outcomes of the measures taken are monitored and evaluated, serving to promote continuous development and strengthen a culture of quality. The documentation of these processes and their public disclosure are key indicators of the University's commitment to accountability and transparency.

## G Summary: Expert recommendations (02.03.2026)

Taking into account the additional information and the comments given by WCU, the experts summarize their analysis and **final assessment** for the award of the seals as follows:

| Degree Programme                               | ASIIN-seal                     | Subject-specific label | Maximum duration of accreditation |
|------------------------------------------------|--------------------------------|------------------------|-----------------------------------|
| Bachelor Computer Engineering                  | With requirements for one year | -                      | 30.09.2031                        |
| Bachelor Computer Science                      | With requirements for one year | -                      | 30.09.2031                        |
| Bachelor Device Engineering                    | With requirements for one year | -                      | 30.09.2031                        |
| Bachelor Information Security                  | With requirements for one year | -                      | 30.09.2031                        |
| Bachelor Information Technology                | With requirements for one year | -                      | 30.09.2031                        |
| Bachelor Mechatronics and Robotics Engineering | With requirements for one year | -                      | 30.09.2031                        |

### Requirements

#### For all degree programmes

- A 1. (ASIIN 1.3, 2) Increase the scope and scientific demand of the final project to verify that students are able to collect, interpret, and critically evaluate information, to work independently on a scientific question from the respective field, using scientific methods.
- A 2. (ASIIN 1.5) Verify the students' total workload and award the ECTS points accordingly.
- A 3. (ASIIN 4.1) Update the module descriptions with respect to the students' total workload and the awarded ECTS points.
- A 4. (ASIIN 5) Improve the internal quality assurance system and redesign the students' satisfaction questionnaires and the respective reports.

#### For the Mechatronics and Robotics Engineering programme

- A 5. (ASIIN 1.3) Include basic courses in mechanical and electrical engineering as well as a course on electric machines/drives in the curriculum.

## **Recommendations**

### **For all degree programmes**

- E 1. (ASIIN 1.3) It is recommended to introduce all students to research methods and good scientific practise before they start with the final project.
- E 2. (ASIIN 1.3) It is recommended to give the teachers more flexibility in introducing new courses or adjusting the course content especially in fast developing areas such as computer sciences and information technology.
- E 3. (ASIIN 1.3) It is recommended to further promote students' and teachers' academic mobility and to give teachers the opportunity to take a sabbatical.
- E 4. (ASIIN 4.1) It is recommended to reword the course learning outcomes and to base them on an internationally accepted taxonomy like Bloom's Taxonomy.
- E 5. (ASIIN 4.3) It is recommended to provide open Wi-Fi access for students at all facilities at WCU.
- E 6. (ASIIN 5) It is recommended to make the internal quality processes transparent to all stakeholders and document how students' feedback is handled and how improvements and changes are initiated and implemented.

### **For the Device Engineering and Mechatronics and Robotics Engineering programmes**

- E 7. (ASIIN 1.4) It is recommended to significantly increase the number of new students.

## **H Comment of the Technical Committees (10.03.2026)**

### **Technical Committee 02 – Electrical Engineering/Information Technology (10.03.2026)**

*Assessment and analysis for the award of the ASIIN seal:*

The Technical Committee discusses the procedure and adopts the experts' assessment without changes.

The Technical Committee 02 – Electrical Engineering/Information Technology recommends the award of the seals as follows:

| <b>Degree Programme</b>                        | <b>ASIIN-seal</b>              | <b>Subject-specific label</b> | <b>Maximum duration of accreditation</b> |
|------------------------------------------------|--------------------------------|-------------------------------|------------------------------------------|
| Bachelor Device Engineering                    | With requirements for one year | -                             | 30.09.2031                               |
| Bachelor Information Security                  | With requirements for one year | -                             | 30.09.2031                               |
| Bachelor Information Technology                | With requirements for one year | -                             | 30.09.2031                               |
| Bachelor Mechatronics and Robotics Engineering | With requirements for one year | -                             | 30.09.2031                               |

### **Technical Committee 04 – Informatics/Computer Science (04.03.2026)**

*Assessment and analysis for the award of the ASIIN seal:*

The TC discusses the procedure and proposes only a minor editorial amendment to recommendation E4; otherwise, it follows the experts' assessment without any changes.

The Technical Committee 04 – Informatics/Computer Science recommends the award of the seals as follows:

| <b>Degree Programme</b>         | <b>ASIIN-seal</b>              | <b>Subject-specific label</b> | <b>Maximum duration of accreditation</b> |
|---------------------------------|--------------------------------|-------------------------------|------------------------------------------|
| Bachelor Computer Engineering   | With requirements for one year | -                             | 30.09.2031                               |
| Bachelor Computer Science       | With requirements for one year | -                             | 30.09.2031                               |
| Bachelor Information Security   | With requirements for one year | -                             | 30.09.2031                               |
| Bachelor Information Technology | With requirements for one year | -                             | 30.09.2031                               |

(ASIIN 4.1) It is recommended to revise the course learning outcomes and to base them on an internationally accepted taxonomy like Bloom's Taxonomy.

# I Decision of the Accreditation Commission (27.03.2026)

*Assessment and analysis for the award of the subject-specific ASIIN seal:*

The Accreditation Commission discusses the procedure and decides to accredit the six study programmes with requirements for one year. The AC supports the word change in recommendation E4. Additionally, the AC decides to add “control engineering” to requirement A5, as this topic is essential for a study programme in Mechatronics and Robotics Engineering.

The Accreditation Commission decides to award the following seals:

| Degree Programme                               | ASIIN-seal                     | Accredited by German Engineers | Subject-specific label | Maximum duration of accreditation |
|------------------------------------------------|--------------------------------|--------------------------------|------------------------|-----------------------------------|
| Bachelor Computer Engineering                  | With requirements for one year | -                              | -                      | 30.09.2031                        |
| Bachelor Computer Science                      | With requirements for one year | -                              | -                      | 30.09.2031                        |
| Bachelor Device Engineering                    | With requirements for one year | With requirements for one year | -                      | 30.09.2031                        |
| Bachelor Information Security                  | With requirements for one year | -                              | -                      | 30.09.2031                        |
| Bachelor Information Technology                | With requirements for one year | -                              | -                      | 30.09.2031                        |
| Bachelor Mechatronics and Robotics Engineering | With requirements for one year | With requirements for one year | -                      | 30.09.2031                        |

## Requirements

**For all degree programmes**

- A 6. (ASIIN 1.3, 2) Increase the scope and scientific demand of the final project to verify that students are able to collect, interpret, and critically evaluate information, to work independently on a scientific question from the respective field, using scientific methods.
- A 7. (ASIIN 1.5) Verify the students' total workload and award the ECTS points accordingly.
- A 8. (ASIIN 4.1) Update the module descriptions with respect to the students' total workload and the awarded ECTS points.
- A 9. (ASIIN 5) Improve the internal quality assurance system and redesign the students' satisfaction questionnaires and the respective reports.

#### **For the Mechatronics and Robotics Engineering programme**

- A 10. (ASIIN 1.3) Include basic courses in mechanical, electrical engineering, and control engineering as well as a course on electric machines/drives in the curriculum.

### **Recommendations**

#### **For all degree programmes**

- E 8. (ASIIN 1.3) It is recommended to introduce all students to research methods and good scientific practise before they start with the final project.
- E 9. (ASIIN 1.3) It is recommended to give the teachers more flexibility in introducing new courses or adjusting the course content especially in fast developing areas such as computer sciences and information technology.
- E 10. (ASIIN 1.3) It is recommended to further promote students' and teachers' academic mobility and to give teachers the opportunity to take a sabbatical.
- E 11. (ASIIN 4.1) It is recommended to revise the course learning outcomes and to base them on an internationally accepted taxonomy like Bloom's Taxonomy.
- E 12. (ASIIN 4.3) It is recommended to provide open Wi-Fi access for students at all facilities at WCU.
- E 13. (ASIIN 5) It is recommended to make the internal quality processes transparent to all stakeholders and document how students' feedback is handled and how improvements and changes are initiated and implemented.

#### **For the Device Engineering and Mechatronics and Robotics Engineering programmes**

- E 14. (ASIIN 1.4) It is recommended to significantly increase the number of new students.

## Appendix: Programme Learning Outcomes and Curricula

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Computer Engineering:

Learning outcomes in the specialty "Computer Engineering":

- ability to work with automated and integrated computer technologies, which allows you to effectively solve problems in various fields;
- ability to apply ICT (Information and Communication Technology) capabilities in various fields of activity, using knowledge in related sciences, language skills and information technology;
- ability to function effectively in a team, the members of which together provide leadership, create a collaborative and inclusive environment, set goals, plan tasks and achieve goals;
- ability to use applications and special software packages to manage various technological processes that help increase productivity, improve the quality and safety of technological operations in various industries;
- ability to apply computer engineering component design methods in the field of computer engineering and develop new solutions, improving the overall performance and reliability of systems;
- ability to use programming languages and software development systems and solve computer engineering problems, create innovative solutions for various applications and devices;
- ability to develop tools based on computer graphics, multimedia and virtual reality technologies to create interactive systems and applications in various fields;
- ability to develop, test and manage databases, user interfaces and information system modules that help ensure efficient data storage and processing, as well as the integration of various technological solutions to solve practical problems;
- ability to recognize ethical and professional responsibilities in engineering situations and to make informed judgments that must take into account the impact of engineering decisions in various fields;

- ability to use foreign language skills to obtain the necessary information of a scientific and technical nature. Ability to use a foreign language to prepare presentations and in oral speech.

The following **curriculum** is presented:

| 1 <sup>st</sup> semester (30 ECTS) |                                                                                                                                                                                       | ECTS Credits |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| ÜF – B03                           | Business and Academic Communication in Azerbaijani                                                                                                                                    | 4            |
| ÜF-B02.01                          | Business and Academic Communication in a Foreign Language - 1                                                                                                                         | 7            |
| İF-BO1                             | Linear Algebra and Analytic Geometry                                                                                                                                                  | 3            |
| İF-BO6                             | Physics                                                                                                                                                                               | 5            |
| İF-BO7                             | Fundamentals of Computer Engineering                                                                                                                                                  | 8            |
| İF-B20                             | Civil Defense                                                                                                                                                                         | 3            |
| 2 <sup>nd</sup> semester (30 ECTS) |                                                                                                                                                                                       |              |
| ÜF-B02.02                          | Business and Academic Communication in a Foreign Language - 2                                                                                                                         | 8            |
| İF-BO2                             | Calculus                                                                                                                                                                              | 7            |
| İF-BO5                             | Probability Theory and Mathematical Statistics                                                                                                                                        | 3            |
| İF-B13                             | Computer Architecture                                                                                                                                                                 | 8            |
| ATMF-BO1                           | 1. Fundamentals of circuit engineering<br>2. Systematic Analysis                                                                                                                      | 4            |
| 3 <sup>rd</sup> semester (30 ECTS) |                                                                                                                                                                                       |              |
| ÜFS-B04                            | 1. Philosophy<br>2. Introduction to Multiculturalism<br>3. Sociology<br>4. Constitution of the Republic of Azerbaijan and Fundamentals of Law<br>5. Logic<br>6. Ethics and Aesthetics | 3            |
| İF-BO8                             | Programming Basics                                                                                                                                                                    | 8            |
| İF-B11                             | Operating Systems                                                                                                                                                                     | 8            |
| İF-B14                             | Theory of circuits                                                                                                                                                                    | 7            |
| ATMF-BO2                           | 1. Computer Diagnostics                                                                                                                                                               | 4            |

|                                    |                                                                             |   |
|------------------------------------|-----------------------------------------------------------------------------|---|
|                                    | 2. Decision Making Systems                                                  |   |
| 4 <sup>th</sup> semester (30 ECTS) |                                                                             |   |
| ÜF-B01                             | History of Azerbaijan                                                       | 5 |
| İF-BO3                             | Differential Equations                                                      | 3 |
| İF-BO4                             | Discrete Mathematics                                                        | 3 |
| İF-BO9                             | Data Structure and Algorithms                                               | 6 |
| ATMF-BO3                           | 1. Programming Technologies<br>2. Application Software package              | 5 |
| ATMF-BO4                           | 1. Algorithmization and Programming<br>2. System simulation                 | 4 |
| ATMF-BO5                           | 1. Ways to Ensure Cyber Security<br>2. Communication Channels               | 4 |
| 5 <sup>th</sup> semester (30 ECTS) |                                                                             |   |
| İF-B10                             | Database Systems                                                            | 7 |
| İF-B12                             | Computer Networks                                                           | 8 |
| İF-B18                             | Computer Graphics                                                           | 5 |
| ATMF-BO6                           | 1. Information Communication Systems<br>2. Human Computer Interface (UI/UX) | 4 |
| ATMF-BO7                           | 1. Mobile Programming<br>2. Materials Science                               | 3 |
| ATMF-BO8                           | 1. Engineering Mathematics<br>2. System Analysis                            | 3 |
| 6 <sup>th</sup> semester (30 ECTS) |                                                                             |   |
| İF-B15                             | Basics of electronics                                                       | 6 |
| İF-B16                             | Digital System                                                              | 7 |
| İF-B17                             | Computer System Security                                                    | 8 |
| ATMF-BO9                           | 1. Web Programming<br>2. Computer Systems design                            | 4 |
| ATMF-B10                           | 1. Development of desktop applications                                      | 5 |

|                                    |                                                                                                                                                                     |    |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
|                                    | 2. Laser and its Application                                                                                                                                        |    |
| 7 <sup>th</sup> semester (30 ECTS) |                                                                                                                                                                     |    |
| ÜFS-B05                            | 1. Information Technology (Specialization)<br>2. Information Management<br>3. Political Science<br>4. Fundamentals of Entrepreneurship and Introduction to Business | 3  |
| İF-B19                             | Computer Modeling                                                                                                                                                   | 7  |
| ATMF-B11                           | 1. Modern Web Development Tools<br>2. Cryptographic Algorithms in Computer Systems algorithms                                                                       | 4  |
| ATMF-B12                           | 1. Data Analytics and Machine Learning<br>2. Object Oriented Programming                                                                                            | 6  |
| ATMF-B13                           | 1. Robotics<br>2. Electrical Engineering                                                                                                                            | 6  |
| ATMF-B14                           | 1. Internet Technologies<br>2. Industrial Production Management                                                                                                     | 4  |
| 8 <sup>th</sup> semester           |                                                                                                                                                                     |    |
|                                    | Internship                                                                                                                                                          | 30 |

The curriculum for part-time study is presented below.

|                                    |                                                               |      |              |
|------------------------------------|---------------------------------------------------------------|------|--------------|
| 1 <sup>st</sup> semester (29 ECTS) |                                                               | ECTS | Cre-<br>dits |
| ÜF-B01                             | History of Azerbaijan                                         | 5    |              |
| ÜF-B02.01                          | Business and Academic Communication in a Foreign Language - 1 | 7    |              |
| ÜF – B03                           | Business and Academic Communication in Azerbaijani            | 4    |              |
| İF-BO6                             | Physics                                                       | 5    |              |
| İF-BO7                             | Fundamentals of Computer Engineering                          | 8    |              |
| 2 <sup>nd</sup> semester (19 ECTS) |                                                               |      |              |
| İF-BO1                             | Linear Algebra and Analytic Geometry                          | 3    |              |
| ÜF-B02.02                          | Business and Academic Communication in a Foreign Language - 2 | 8    |              |

|                                    |                                                                                                                                                                                       |   |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| İF-B13                             | Computer Architecture                                                                                                                                                                 | 8 |
| 3 <sup>rd</sup> semester (20 ECTS) |                                                                                                                                                                                       |   |
| ÜFS-B04                            | 1. Philosophy<br>2. Introduction to Multiculturalism<br>3. Sociology<br>4. Constitution of the Republic of Azerbaijan and Fundamentals of Law<br>5. Logic<br>6. Ethics and Aesthetics | 3 |
| İF-BO2                             | Calculus                                                                                                                                                                              | 7 |
| İF-BO5                             | Probability Theory and Mathematical Statistics                                                                                                                                        | 3 |
| İF-B20                             | Civil Defense                                                                                                                                                                         | 3 |
| ATMF-BO1                           | 1. Fundamentals of circuit engineering<br>2. Systematic Analysis                                                                                                                      | 4 |
| 4 <sup>th</sup> semester (28 ECTS) |                                                                                                                                                                                       |   |
| İF-BO8                             | Programming Basics                                                                                                                                                                    | 8 |
| İF-B11                             | Operating Systems                                                                                                                                                                     | 8 |
| İF-B17                             | Computer System Security                                                                                                                                                              | 8 |
| ATMF-BO2                           | 1. Computer Diagnostics<br>2. Decision Making Systems                                                                                                                                 | 4 |
| 5 <sup>th</sup> semester (24 ECTS) |                                                                                                                                                                                       |   |
| İF-BO3                             | Differential Equations                                                                                                                                                                | 3 |
| İF-BO4                             | Discrete Mathematics                                                                                                                                                                  | 3 |
| İF-BO9                             | Data Structure and Algorithms                                                                                                                                                         | 6 |
| ATMF-BO4                           | 1. Algorithmization and Programming<br>2. System simulation                                                                                                                           | 4 |
| ATMF-BO5                           | 1. Ways to Ensure Cyber Security<br>2. Communication Channels                                                                                                                         | 4 |
| ATMF-BO6                           | 1. Information Communication Systems                                                                                                                                                  | 4 |

|                                    |                                                                                                                                                                     |   |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
|                                    | 2. Human Computer Interface (UI/UX)                                                                                                                                 |   |
| 6 <sup>th</sup> semester (24 ECTS) |                                                                                                                                                                     |   |
| İF-B10                             | Database Systems                                                                                                                                                    | 7 |
| İF-B12                             | Computer Networks                                                                                                                                                   | 8 |
| ATMF-BO3                           | 1. Programming Technologies<br>2. Application Software package                                                                                                      | 5 |
| ATMF-B14                           | 1. Internet Technologies<br>2. Industrial Production Management                                                                                                     | 4 |
| 7 <sup>th</sup> semester (24 ECTS) |                                                                                                                                                                     |   |
| İF-B14                             | Theory of circuits                                                                                                                                                  | 7 |
| İF-B15                             | Basics of electronics                                                                                                                                               | 6 |
| İF-B16                             | Digital System                                                                                                                                                      | 7 |
| ATMF-BO9                           | 1. Web Programming<br>2. Computer Systems design                                                                                                                    | 4 |
| 8 <sup>th</sup> semester (24 ECTS) |                                                                                                                                                                     |   |
| ÜFS-B05                            | 1. Information Technology (Specialization)<br>2. Information Management<br>3. Political Science<br>4. Fundamentals of Entrepreneurship and Introduction to Business | 3 |
| İF-B19                             | Computer Modeling                                                                                                                                                   | 7 |
| ATMF-BO8                           | 1. Engineering Mathematics<br>2. System Analysis                                                                                                                    | 3 |
| ATMF-B10                           | 1. Development of desktop applications<br>2. Laser and its Application                                                                                              | 5 |
| ATMF-B12                           | 1. Data Analytics and Machine Learning<br>2. Object Oriented Programming                                                                                            | 6 |
| 9 <sup>th</sup> semester (18 ECTS) |                                                                                                                                                                     |   |
| İF-B18                             | Computer Graphics                                                                                                                                                   | 5 |

|                                     |                                                                                    |    |
|-------------------------------------|------------------------------------------------------------------------------------|----|
| ATMF-BO7                            | 1. Mobile Programming<br>2. Materials Science                                      | 3  |
| ATMF-B11                            | 1. Modern Web Development Tools<br>2. Cryptographic Algorithms in Computer Systems | 4  |
| ATMF-B13                            | 1. Robotics<br>2. Electrical Engineering                                           | 6  |
| 10 <sup>th</sup> semester (30 ECTS) |                                                                                    |    |
|                                     | Internship                                                                         | 30 |

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Computer Science:

Learning outcomes in the specialty "Computer Science":

- ability to apply mathematical tools to analyze software systems and data based on statistical and probabilistic models;
- ability to apply computer science theory and software engineering fundamentals to create computational solutions;
- ability to develop critical thinking and research methods to promote lifelong learning for personal and professional development;
- ability to use modern tools and methodologies in computing practice;
- ability to work effectively in teams to achieve common goals of designing, evaluating or implementing computing;
- ability to apply design and development principles to creating software systems of varying complexity;
- ability to design, implement and evaluate a computer system, process, architecture, component or program to meet desired needs;
- ability to apply project management tools at various stages of the project life cycle, perform qualitative and quantitative risk assessment of projects, determine project effectiveness;
- ability to design and create software, web applications, mobile applications using modern development tools, libraries, templates and frameworks;
- ability to use foreign language skills to obtain the necessary information of a scientific and technical nature. Ability to use a foreign language to prepare presentations and in oral speech.

The following **curriculum** is presented:

| 1 <sup>st</sup> semester (30 ECTS) |                                                               | ECTS Credits |
|------------------------------------|---------------------------------------------------------------|--------------|
| ÜF – B03                           | Business and Academic Communication in Azerbaijani            | 4            |
| ÜF-B02.01                          | Business and Academic Communication in a Foreign Language - 1 | 7            |
| İF-B01                             | Calculus -1                                                   | 6            |
| İF-B03                             | Physics                                                       | 3            |
| İF-B07                             | Linear Algebra and Analytic Geometry                          | 4            |
| İF-B26                             | Civil Defense                                                 | 3            |
| 2 <sup>nd</sup> semester (30 ECTS) |                                                               |              |
| ÜF-B02.02                          | Business and Academic Communication in a Foreign Language - 2 | 8            |
| İF-B02                             | Calculus -2                                                   | 6            |
| İF-B04                             | Programming Basics-1                                          | 5            |
| İF-B09                             | Computer Architecture                                         | 5            |
| ATMF-BO1                           | 1. Computer Modeling<br>2. Design of Computer System          | 6            |
| 3 <sup>rd</sup> semester (27 ECTS) |                                                               |              |
| ÜF-B01                             | History of Azerbaijan                                         | 5            |
| İF-B05                             | Programming Basics -2                                         | 5            |
| İF-B08                             | Probability Theory and Mathematical Statistics                | 4            |
| İF-B10                             | Analytic Geometry                                             | 4            |
| İF-B11                             | Web Technology                                                | 4            |
| ATMF-BO2                           | 1. Computer Graphics<br>2. Application Software Packages      | 5            |
| ÜFS-B04                            | 1. Philosophy<br>2. Introduction to Multiculturalism          | 3            |

|                                    |                                                                                                                               |   |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|---|
|                                    | 3. Sociology<br>4. Constitution of the Republic of Azerbaijan and Fundamentals of Law<br>5. Logic<br>6. Ethics and Aesthetics |   |
| 4 <sup>th</sup> semester (30 ECTS) |                                                                                                                               |   |
| İF-BO6                             | Programming Basics-3                                                                                                          | 4 |
| İF-B12                             | Discrete Mathematics                                                                                                          | 6 |
| İF-B14                             | Numerical Methods – 1                                                                                                         | 4 |
| İF-B16                             | Operating Systems                                                                                                             | 5 |
| ATMF-BO3                           | 1. Human-Computer Interface (UI/UX)<br>2. Information and Communication Systems                                               | 6 |
| ATMF-BO4                           | 1. Systematic Analysis<br>2. Fundamentals of Circuit Design                                                                   | 5 |
| 5 <sup>th</sup> semester (33 ECTS) |                                                                                                                               |   |
| İF-B15                             | Numerical Methods – 2                                                                                                         | 5 |
| İF-B17                             | Programming Technologies                                                                                                      | 5 |
| İF-B18                             | Database Systems                                                                                                              | 5 |
| İF-B19                             | Computer Networks                                                                                                             | 6 |
| ATMF-BO5                           | 1. System Simulation<br>2. Distributed Systems for Data                                                                       | 5 |
| ATMF-BO6                           | 1. Robotics<br>2. Electrical Engineering<br>3. Embedded Systems                                                               | 4 |
| 6 <sup>th</sup> semester (30 ECTS) |                                                                                                                               |   |
| İF-B13                             | Differential Equations                                                                                                        | 6 |
| İF-B20                             | Methods of Algorithm Analysis and Design-1                                                                                    | 4 |
| İF-B22                             | Parallel and Distributed Computations                                                                                         | 4 |

|                                    |                                                                                                                                                                   |    |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| İF-B23                             | Artificial Intelligence                                                                                                                                           | 4  |
| ATMF-BO7                           | 1. Cybersecurity<br>2. Information Security on Mobile Phones<br>3. Methods of Ensuring Cybersecurity                                                              | 6  |
| ATMF-BO8                           | 1. Data Structure and Algorithms<br>2. Web Programming                                                                                                            | 6  |
| 7 <sup>th</sup> semester (30 ECTS) |                                                                                                                                                                   |    |
| ÜFS-B05                            | 1. Information technology (by specialty)<br>2. Information management<br>3. Political science<br>4. Fundamentals of entrepreneurship and introduction to business | 3  |
| İF-B21                             | Methods of Analysis and Development of Algorithms -2                                                                                                              | 4  |
| İF-B24                             | Complex Analysis                                                                                                                                                  | 4  |
| İF-B25                             | Optimization Methods                                                                                                                                              | 5  |
| ATMF-BO9                           | 1. Problems in Mathematical Logic<br>2. Laser and Its Application<br>3. Computer Mathematics                                                                      | 6  |
| ATMF -B10                          | 1. Digital Systems<br>2. Intelligent Systems<br>3. Expert Systems                                                                                                 | 7  |
| ATMF -B11                          | 1. Internet Technologies<br>2. Structured Programming                                                                                                             | 4  |
| 8 <sup>th</sup> semester (30 ECTS) |                                                                                                                                                                   |    |
|                                    | Internship                                                                                                                                                        | 30 |

The curriculum for part-time study is presented below.

| 1 <sup>st</sup> semester (24 ECTS) |                                                                                                                                                                   | ECTS Credits |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| ÜF – B03                           | Business and Academic Communication in Azerbaijani                                                                                                                | 4            |
| ÜF-B02.01                          | Business and Academic Communication in a Foreign Language - 1                                                                                                     | 7            |
| İF-B03                             | Physics                                                                                                                                                           | 3            |
| İF-B07                             | Linear Algebra                                                                                                                                                    | 4            |
| İF-B26                             | Civil Defense                                                                                                                                                     | 3            |
| ÜFS-B05                            | 1. Information technology (by specialty)<br>2. Information management<br>3. Political science<br>4. Fundamentals of entrepreneurship and introduction to business | 3            |
| 2 <sup>nd</sup> semester (24 ECTS) |                                                                                                                                                                   |              |
| ÜF-B02.02                          | Business and Academic Communication in a Foreign Language - 2                                                                                                     | 8            |
| İF-B01                             | Calculus -1                                                                                                                                                       | 6            |
| İF-B04                             | Fundamentals of Programming -1                                                                                                                                    | 5            |
| İF-B09                             | Computer Architecture                                                                                                                                             | 5            |
| 3 <sup>rd</sup> semester (24 ECTS) |                                                                                                                                                                   |              |
| ÜF-B01                             | History of Azerbaijan                                                                                                                                             | 5            |
| İF-B02                             | Calculus -2                                                                                                                                                       | 6            |
| İF-B05                             | Fundamentals of Programming-2                                                                                                                                     | 5            |
| İF-B08                             | Probability Theory and Mathematical Statistics                                                                                                                    | 4            |
| İF-B10                             | Analytic Geometry                                                                                                                                                 | 4            |
| 4 <sup>th</sup> semester (24 ECTS) |                                                                                                                                                                   |              |
| İF-B07                             | Fundamentals of Programming-3                                                                                                                                     | 4            |
| İF-B11                             | Web Technologies                                                                                                                                                  | 4            |

|                                    |                                                                                                                                                                                       |   |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| İF-B12                             | Discrete Mathematics                                                                                                                                                                  | 6 |
| İF-B16                             | Operating Systems                                                                                                                                                                     | 5 |
| ATMF-BO1                           | 1. Computer Modeling<br>2. Design of Computer System                                                                                                                                  | 6 |
| İF-B14                             | Numerical Methods – 1                                                                                                                                                                 | 4 |
| 5 <sup>th</sup> semester (24 ECTS) |                                                                                                                                                                                       |   |
| İF-B15                             | Numerical Methods – 2                                                                                                                                                                 | 5 |
| İF-B17                             | Programming Technologies                                                                                                                                                              | 5 |
| İF-B18                             | Database Systems                                                                                                                                                                      | 5 |
| ATMF-BO2                           | 1. Computer Graphics<br>2. Application Software Packages                                                                                                                              | 5 |
| İF-B22                             | Parallel and Distributed Computations                                                                                                                                                 | 4 |
| 6 <sup>th</sup> semester (24 ECTS) |                                                                                                                                                                                       |   |
| ÜFS-B04                            | 1. Philosophy<br>2. Introduction to Multiculturalism<br>3. Sociology<br>4. Constitution of the Republic of Azerbaijan and Fundamentals of Law<br>5. Logic<br>6. Ethics and Aesthetics | 3 |
| İF-B13                             | Differential Equations                                                                                                                                                                | 6 |
| İF-B19                             | Computer Networks                                                                                                                                                                     | 6 |
| İF-B20                             | Methods of Algorithm Analysis and Design -1                                                                                                                                           | 4 |
| ATMF-BO3                           | 1. Human-Computer Interface (UI/UX)<br>2. Information and Communication Systems                                                                                                       | 6 |
| 7 <sup>th</sup> semester (24 ECTS) |                                                                                                                                                                                       |   |
| İF-B21                             | Methods of Algorithm Analysis and Design-2                                                                                                                                            | 4 |
| İF-B23                             | Artificial Intelligence                                                                                                                                                               | 4 |

|                                     |                                                                                                      |    |
|-------------------------------------|------------------------------------------------------------------------------------------------------|----|
| ATMF-BO4                            | 1. Systematic Analysis<br>2. Fundamentals of Circuit Design                                          | 5  |
| ATMF-BO5                            | 1. System Simulation<br>2. Distributed Systems for Data                                              | 5  |
| 8 <sup>th</sup> semester (24 ECTS)  |                                                                                                      |    |
| İF-B25                              | Complex Analysis                                                                                     | 4  |
| ATMF-BO6                            | 1. Robotics<br>2. Electrical Engineering<br>3. Embedded Systems                                      | 4  |
| ATMF-BO7                            | 1. Cybersecurity<br>2. Information Security on Mobile Phones<br>3. Methods of Ensuring Cybersecurity | 6  |
| ATMF-BO8                            | 1. Data Structure and Algorithms<br>2. Web Programming                                               | 6  |
| 9 <sup>th</sup> semester (18 ECTS)  |                                                                                                      |    |
| İF-B25                              | Optimization Methods                                                                                 | 5  |
| ATMF-BO9                            | 1. Problems in Mathematical Logic<br>2. Laser and Its Application<br>3. Computer Mathematics         | 6  |
| ATMF -B10                           | 1. Digital Systems<br>2. Intelligent Systems<br>3. Expert Systems                                    | 7  |
| ATMF -B11                           | 1. Internet Technologies<br>2. Structured Programming                                                | 4  |
| 10 <sup>th</sup> semester (30 ECTS) |                                                                                                      |    |
|                                     | Internship                                                                                           | 30 |

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Device Engineering:

Learning outcomes in the specialty "Device Engineering":

- ability to apply natural science and general engineering knowledge, methods of mathematical analysis and modeling in engineering activities related to the design, construction and production of devices, systems and complexes;
- ability to understand the operating principles and functional capabilities of electronic devices, especially semiconductor ones, and also be able to analyze circuits and calculation methods for microelectronic elements;
- ability to work with computer models, drawings and graphic tools (for example, AUTOCAD), as well as understand the requirements of standards and principles of drawing;
- ability to use the principles of automatic control, know digital computing technology, micro-processor technology, their application in instrument making and industrial control;
- ability to understand device manufacturing technologies, develop assembly processes, and apply mechanization and automation of processes in the production of devices and installations.
- ability to use various types of devices to monitor and control technological processes;
- ability to plan, conduct experiments in project work and research, as well as perform and present targeted processing of the results obtained in order to obtain valid results;
- ability to use modern information technologies and software, observing information security requirements in their professional activities;
- ability to carry out professional activities taking into account economic, environmental, social, intellectual, legal and other restrictions at all stages of the life cycle of technical objects and processes;
- ability to use foreign language skills to obtain the necessary scientific and technical information. Ability to use a foreign language to prepare presentations and in oral speech.

The following **curriculum** is presented:

| 1 <sup>st</sup> semester (30 ECTS) |                                                                                                          | ECTS Credits |
|------------------------------------|----------------------------------------------------------------------------------------------------------|--------------|
| ÜF – B03                           | Business and Academic Communication in Azerbaijani                                                       | 4            |
| ÜF-B02.01                          | Business and Academic Communication in a Foreign Language -1                                             | 7            |
| İF-BO1                             | Linear Algebra and Analytic Geometry                                                                     | 4            |
| İF-BO4                             | Fundamentals of Physics                                                                                  | 5            |
| İF-BO7                             | Fundamentals of Computer Systems Hardware and Software                                                   | 7            |
| İF-B21                             | Civil Defense                                                                                            | 3            |
| 2 <sup>nd</sup> semester (30 ECTS) |                                                                                                          |              |
| ÜF-B01                             | History of Azerbaijan                                                                                    | 5            |
| ÜF-B02.02                          | Business and Academic Communication in a Foreign Language -2                                             | 8            |
| İF-BO2                             | Calculus                                                                                                 | 8            |
| İF-BO8                             | Engineering Graphics and Design                                                                          | 4            |
| İF-B18                             | Fundamentals of device technologies                                                                      | 5            |
| 3 <sup>rd</sup> semester (27 ECTS) |                                                                                                          |              |
| İF-BO3                             | Applied Mathematics                                                                                      | 4            |
| İF-B19                             | Automated device design systems                                                                          | 6            |
| İF-B20                             | Physical foundations of information acquisition, modern sensors and transducers                          | 6            |
| ATMF-BO1                           | 1. Programming Languages and computer science<br>2. Technical and object-oriented C programming language | 5            |
| ATMF-BO2                           | 1. Electromagnetics                                                                                      | 6            |

|                                    |                                                                                                                                                                                       |   |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
|                                    | 2. Mechatronics Systems                                                                                                                                                               |   |
| 4 <sup>th</sup> semester (30 ECTS) |                                                                                                                                                                                       |   |
| İF-BO5                             | Applied Physics                                                                                                                                                                       | 7 |
| İF-BO6                             | Chemistry                                                                                                                                                                             | 6 |
| İF-B17                             | Microprocessors and Microcontrollers                                                                                                                                                  | 6 |
| ATMF-BO3                           | 1. Biomedical Devices, Apparatus, Systems and Complexes<br>2. Computer Biomedical Devices                                                                                             | 6 |
| ATMF-BO4                           | 1. Laser and Its Application<br>2. Laser Technology                                                                                                                                   | 5 |
| 5 <sup>th</sup> semester (33 ECTS) |                                                                                                                                                                                       |   |
| ÜFS-B04                            | 1. Philosophy<br>2. Introduction to Multiculturalism<br>3. Sociology<br>4. Constitution of the Republic of Azerbaijan and Fundamentals of Law<br>5. Logic<br>6. Ethics and Aesthetics | 3 |
| İF-BO9                             | Electrical Engineering                                                                                                                                                                | 7 |
| İF-B10                             | Mechanical Engineering                                                                                                                                                                | 6 |
| İF-B12                             | Computer-based Engineering Devices                                                                                                                                                    | 5 |
| ATMF-BO5                           | 1. Life Safety<br>2. Dynamics of Machines and Mechanisms                                                                                                                              | 4 |
| ATMF-BO6                           | 1. Engineering Mathematics<br>2. Differential Equations                                                                                                                               | 4 |
| ATMF-BO7                           | 1. Mathematical Logic Problems<br>2. Discrete Mathematics                                                                                                                             | 4 |
| 6 <sup>th</sup> semester (30 ECTS) |                                                                                                                                                                                       |   |
| İF-B11                             | Electronics and Circuit engineering                                                                                                                                                   | 6 |

|                                    |                                                                                                                                                                     |    |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| İF-B13                             | Quality Control and Metrology                                                                                                                                       | 7  |
| İF-B14                             | Measuring technologies                                                                                                                                              | 6  |
| ATMF-BO8                           | 1. Materials and Processes<br>2. Nanotechnologies                                                                                                                   | 6  |
| ATMF -BO9                          | 1. Optical Information Systems<br>2. Engineering Design Systems                                                                                                     | 5  |
| 7 <sup>th</sup> semester (30 ECTS) |                                                                                                                                                                     |    |
| ÜFS-B05                            | 1. Information Technology (Specialization)<br>2. Information Management<br>3. Political Science<br>4. Fundamentals of Entrepreneurship and Introduction to Business | 3  |
| İF-B15                             | Industrial Devices                                                                                                                                                  | 6  |
| İF-B16                             | Materials Science                                                                                                                                                   | 6  |
| ATMF-B10                           | 1. Computer Design<br>2. Digital Electronics                                                                                                                        | 5  |
| ATMF-B11                           | 1. Intelligent Systems<br>2. Modern Production Processes                                                                                                            | 5  |
| ATMF-B12                           | 1. Robotics Complexes<br>2. Industrial Robots                                                                                                                       | 5  |
| 8 <sup>th</sup> semester (30 ECTS) |                                                                                                                                                                     |    |
|                                    | Internship                                                                                                                                                          | 30 |

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Information Security:

Learning outcomes in the specialty "Information Security":

- ability to apply theoretical and practical knowledge in the field of natural sciences and mathematics, to be able to solve engineering problems and model processes in the field of information security;
- ability to apply mathematical principles of cryptographic algorithms;
- ability to apply knowledge in the field of design and secure software development for verification, static analysis and identification of vulnerabilities of program code;
- ability to apply system, application and special software, information and communication technologies, programming languages and software development systems to solve professional problems;
- ability to use modern information and communication technology products, software and hardware, as well as modern decision-making methods;
- ability to apply information security organization tools, delineation of powers and coordination between users and processes, planning and design, documentation, registration, archiving, licensing, special permit for activity, audit, certification, performance evaluation, certification, accreditation, examination of ICT projects and products;
- ability to prepare initial data for designing subsystems and tools that ensure information security, as well as conduct technical and economic justifications for the relevant design solutions;
- ability to apply regulatory legal acts, regulatory and methodological documents governing information security activities in an organization (administration, enterprise);
- ability to use the necessary mathematical methods to solve information security problems;
- ability to use foreign language skills to obtain the necessary scientific and technical information. Ability to use a foreign language to prepare presentations and in oral speech.

The following curriculum is presented:

Full time studies:

| 1 <sup>st</sup> semester (30 ECTS) |                                                                               | ECTS Credits |
|------------------------------------|-------------------------------------------------------------------------------|--------------|
| ÜF-B01                             | History of Azerbaijan                                                         | 5            |
| ÜF-B02.01                          | Business and Academic Communication in a Foreign Language - 1                 | 7            |
| İF-BO1                             | Fundamentals of information security                                          | 6            |
| İF-BO2                             | Fundamentals of programming                                                   | 6            |
| İF-BO3                             | Calculus                                                                      | 6            |
| 2 <sup>nd</sup> Semester (30 ECTS) |                                                                               |              |
| ÜF – B03                           | Business and Academic Communication in Azerbaijani                            | 4            |
| ÜF-B02.02                          | Business and Academic Communication in a Foreign Language - 2                 | 8            |
| İF-BO4                             | Fundamentals of cybersecurity                                                 | 6            |
| İF-BO5                             | Fundamentals of networks                                                      | 6            |
| İF-BO6                             | Linear Algebra                                                                | 6            |
| 3 <sup>rd</sup> semester (30 ECTS) |                                                                               |              |
| İF-BO7                             | Operating Systems                                                             | 5            |
| İF-BO8                             | Network Security                                                              | 5            |
| İF-BO9                             | Discrete Mathematics                                                          | 5            |
| ATMF-BO1                           | 1. Construction and Analysis of Algorithms<br>2. System Design                | 6            |
| ATMF-BO2                           | 1. Security of Corporate Network (Information) Systems<br>2. Malware Analysis | 5            |
| ATMF-BO3                           | 1. Social Network Analysis<br>2. Social Engineering                           | 4            |
| 4 <sup>th</sup> semester (30 ECTS) |                                                                               |              |
| İF-B10                             | Web Security                                                                  | 5            |
| İF-B11                             | Probability Theory                                                            | 5            |

|                                    |                                                                                                                           |   |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---|
| İF-B12                             | Legal Aspects of Information Security and Cybersecurity                                                                   | 5 |
| ATMF-BO4                           | 1. System Programming<br>2. Programming Language C                                                                        | 5 |
| ATMF-BO5                           | 1. Cloud Technologies<br>2. Managing IT projects                                                                          | 5 |
| ATMF-BO6                           | 1. Database Management Systems<br>2. Microservices Architecture<br>3. Cyber Risk Management                               | 5 |
| 5 <sup>th</sup> semester (30 ECTS) |                                                                                                                           |   |
| ÜFS-B04                            | 1. Psychology<br>2. Sociology<br>3. Fundamentals of Law<br>4. Engineering Ethics                                          | 3 |
| İF-B13                             | Information Security Management Systems                                                                                   | 5 |
| İF-B14                             | Database Security                                                                                                         | 5 |
| İF-B15                             | Cloud Security                                                                                                            | 5 |
| İF-B22                             | Civil Defence                                                                                                             | 3 |
| ATMF-BO7                           | 1. Machine Learning<br>2. Fundamentals of Digital Image and Video Processing                                              | 4 |
| ATMF-BO8                           | 1. Graph Theory<br>2. Security of Mobile and Wireless Devices                                                             | 5 |
| 6 <sup>th</sup> semester (30 ECTS) |                                                                                                                           |   |
| ÜFS-B05                            | 1. Critical thinking<br>2. Fundamentals of entrepreneurship and business introduction<br>3. Education and career planning | 3 |
| İF-B16                             | Fundamentals of cryptography                                                                                              | 5 |
| İF-B17                             | Penetration Testing Basics                                                                                                | 8 |
| İF-B18                             | Fundamentals of Electronics and IoT Security                                                                              | 5 |

|                                    |                                                                                     |    |
|------------------------------------|-------------------------------------------------------------------------------------|----|
| ATMF-BO9                           | 1. Programming for mobile devices<br>2. Web Programming                             | 4  |
| ATMF-B10                           | 1. Applied Statistics and Data Analytics<br>2. Parallel and Distributed Computation | 5  |
| 7 <sup>th</sup> semester (30 ECTS) |                                                                                     |    |
| İF-B19                             | Secure Programming                                                                  | 5  |
| İF-B20                             | Digital Forensics Fundamentals                                                      | 8  |
| İF-B21                             | Security of Industrial Management Systems                                           | 5  |
| ATMF-B11                           | 1. Security of VoIP systems<br>2. Blockchain Technologies                           | 4  |
| ATMF-B12                           | 1. Distributed Data systems<br>2. Fundamentals of Data Center Operations            | 4  |
| ATMF-B13                           | 1. Digital Transformation<br>2. Corporate Network (Information Systems Security)    | 4  |
| 8 <sup>th</sup> semester (30 ECTS) |                                                                                     |    |
|                                    | Internship                                                                          | 30 |

The curriculum for part-time study is presented below:

|                                    |                                                               |              |
|------------------------------------|---------------------------------------------------------------|--------------|
| 1 <sup>st</sup> semester (24 ECTS) |                                                               | ECTS Credits |
| ÜF-B01                             | History of Azerbaijan                                         | 5            |
| ÜF-B02.01                          | Business and academic communication in a Foreign Language - 1 | 7            |
| İF-BO1                             | Fundamentals of information security                          | 6            |
| İF-BO3                             | Calculus                                                      | 6            |
| 2 <sup>nd</sup> semester (24 ECTS) |                                                               |              |
| ÜF – B03                           | Business and academic communication in Azerbaijani            | 4            |
| ÜF-B02.02                          | Business and academic communication in a Foreign Language - 2 | 8            |
| İF-BO2                             | Fundamentals of programming                                   | 6            |

|                                    |                                                                                  |   |
|------------------------------------|----------------------------------------------------------------------------------|---|
| İF-BO6                             | Linear Algebra                                                                   | 6 |
| 3 <sup>rd</sup> semester (24 ECTS) |                                                                                  |   |
| ÜFS-B04                            | 1. Psychology<br>2. Sociology<br>3. Fundamentals of Law<br>4. Engineering Ethics | 3 |
| İF-BO4                             | Fundamentals of cybersecurity                                                    | 6 |
| İF-BO8                             | Fundamentals of networks                                                         | 6 |
| ATMF-BO1                           | 1. Construction and Analysis of Algorithms<br>2. System Design                   | 6 |
| İF-B22                             | Civil Defense                                                                    | 3 |
| 4 <sup>th</sup> semester (24 ECTS) |                                                                                  |   |
| İF-BO7                             | Operating Systems                                                                | 5 |
| İF-BO8                             | Network Security                                                                 | 5 |
| İF-BO9                             | Discrete Mathematics                                                             | 5 |
| ATMF-BO2                           | 1. Security of Corporate Network (Information) Systems<br>2. Malware Analysis    | 5 |
| ATMF-BO3                           | 1. Social Network Analysis<br>2. Social Engineering                              | 4 |
| 5 <sup>th</sup> semester (24 ECTS) |                                                                                  |   |
| İF-B10                             | Web Security                                                                     | 5 |
| İF-B11                             | Probability Theory                                                               | 5 |
| İF-B12                             | Legal Aspects of Information Security and Cybersecurity                          | 5 |
| ATMF-BO4                           | 1. System Programming<br>2. Programming Language C                               | 5 |
| ATMF-BO7                           | 1. Machine Learning<br>2. Fundamentals of Digital Image and Video Processing     | 4 |
| 6 <sup>th</sup> semester (24 ECTS) |                                                                                  |   |

|                                    |                                                                                                                           |   |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---|
| İF-B13                             | Information Security Management Systems                                                                                   | 5 |
| İF-B14                             | Database Security                                                                                                         | 5 |
| İF-B15                             | Cloud Security                                                                                                            | 5 |
| ATMF-BO5                           | 1. Cloud Technologies<br>2. Managing IT projects                                                                          | 5 |
| ATMF-BO9                           | 1. Programming for mobile devices<br>2. Web Programming                                                                   | 4 |
| 7 <sup>th</sup> semester (24 ECTS) |                                                                                                                           |   |
| ÜFS-B05                            | 1. Critical thinking<br>2. Fundamentals of entrepreneurship and business introduction<br>3. Education and career planning | 3 |
| İF-B16                             | Fundamentals of cryptography                                                                                              | 5 |
| İF-B17                             | Penetration Testing Basics                                                                                                | 8 |
| İF-B20                             | Digital Forensics Fundamentals                                                                                            | 8 |
| 8 <sup>th</sup> semester (24 ECTS) |                                                                                                                           |   |
| İF-B18                             | Basics of Electronics and IoT Security                                                                                    | 5 |
| İF-B19                             | Secure Programming                                                                                                        | 5 |
| İF-B21                             | Security of Industrial Management Systems                                                                                 | 5 |
| ATMF-BO6                           | 1. Database Management Systems<br>2. Microservices Architecture<br>3. Cyber Risk Management                               | 5 |
| ATMF-B11                           | 1. Security of VoIP systems<br>2. Blockchain Technologies                                                                 | 4 |
| 9 <sup>th</sup> semester (18 ECTS) |                                                                                                                           |   |
| ATMF-BO8                           | 1. Graph Theory<br>2. Security of Mobile and Wireless Devices                                                             | 5 |
| ATMF-B10                           | 1. Applied Statistics and Data Analytics<br>2. Parallel and Distributed Computation                                       | 5 |

|                                     |                                                                                  |    |
|-------------------------------------|----------------------------------------------------------------------------------|----|
| ATMF-B12                            | 1. Distributed Data systems<br>2. Fundamentals of Data Center Operations         | 4  |
| ATMF-B13                            | 1. Digital Transformation<br>2. Corporate Network (Information Systems Security) | 4  |
| 10 <sup>th</sup> semester (30 ECTS) |                                                                                  |    |
|                                     | Internship                                                                       | 30 |

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Information Technology:

Learning outcomes in the specialty "Information Technology":

- ability to apply knowledge in the field of mathematics, information technology, science and engineering to solve practical problems;
- ability to identify problems and find a systemic solution through experimentation, situation analysis and interpretation of the obtained data;
- ability to develop, implement and evaluate software or hardware-software solutions, taking into account real-world constraints and needs;
- ability to recognize, formulate and schematically solve complex technical and engineering problems;
- ability to work with modern engineering methods, skills and tools, as well as standards necessary for professional IT activities;
- ability to apply mathematical knowledge, algorithmic principles and theoretical foundations of computer science in the creation and modeling of computing systems, taking into account the limitations and assumptions;
- ability to analyze and evaluate the impact of information technology on society, organizations and individuals both at the local and global level;
- ability to interact effectively both individually and as part of a team to achieve set goals;
- ability to participate in continuous learning and professional growth in order to adapt to the rapid development of technology through participation in additional courses, career guidance initiatives and extracurricular activities;
- ability to use foreign language skills to obtain the necessary scientific and technical information. The ability to use a foreign language to prepare presentations and in oral speech.

The following curriculum is presented:

| 1 <sup>st</sup> semester (30 ECTS) |                                                                                                                                                                                       | ECTS Credits |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| ÜF – B03                           | Business and Academic Communication in Azerbaijani                                                                                                                                    | 4            |
| ÜF-B02.01                          | Business and Academic Communication in a Foreign Language - 1                                                                                                                         | 7            |
| İF-BO1                             | Linear Algebra and Analytic Geometry                                                                                                                                                  | 3            |
| İF-BO6                             | Physics                                                                                                                                                                               | 5            |
| İF-BO7                             | Basics of Information Technology                                                                                                                                                      | 8            |
| İF-B21                             | Civil Defense                                                                                                                                                                         | 3            |
| 2 <sup>nd</sup> semester (30 ECTS) |                                                                                                                                                                                       |              |
| ÜF-B02.02                          | Business and Academic Communication in a Foreign Language - 2                                                                                                                         | 8            |
| İF-BO2                             | Calculus                                                                                                                                                                              | 7            |
| İF-BO5                             | Probability Theory and Mathematical Statistics                                                                                                                                        | 3            |
| İF-B10                             | Computer Architecture                                                                                                                                                                 | 8            |
| ATMF-BO1                           | 1. Fundamentals of Circuit Technology<br>2. Systems Analysis                                                                                                                          | 4            |
| 3 <sup>rd</sup> semester (30 ECTS) |                                                                                                                                                                                       |              |
| ÜFS-B04                            | 1. Philosophy<br>2. Introduction to Multiculturalism<br>3. Sociology<br>4. Constitution of the Republic of Azerbaijan and Fundamentals of Law<br>5. Logic<br>6. Ethics and Aesthetics | 3            |
| İF-BO8                             | Fundamentals of Programming                                                                                                                                                           | 6            |
| İF-B13                             | Operating Systems                                                                                                                                                                     | 6            |
| İF-B14                             | Multimedia Technologies                                                                                                                                                               | 6            |

|                                    |                                                                                    |   |
|------------------------------------|------------------------------------------------------------------------------------|---|
| ATMF-BO2                           | 1. Computer Diagnostics<br>2. Decision Support Systems                             | 4 |
| ATMF-BO3                           | 1. Digital Cartography and Geographic Information Systems<br>2. Cloud Technologies | 5 |
| 4 <sup>th</sup> semester (30 ECTS) |                                                                                    |   |
| ÜF-B01                             | History of Azerbaijan                                                              | 5 |
| İF-BO3                             | Differential Equations                                                             | 3 |
| İF-BO4                             | Discrete Mathematics                                                               | 3 |
| İF-B11                             | Data Structure and Algorithms                                                      | 7 |
| ATMF-BO4                           | 1. Programming Technologies<br>2. Research Software Package                        | 5 |
| ATMF-BO5                           | 1. Algorithmization and Programming<br>2. System Simulation                        | 4 |
| ATMF-BO6                           | 1. Methods of Ensuring Cybersecurity<br>2. Communication Channels                  | 3 |
| 5 <sup>th</sup> semester (34 ECTS) |                                                                                    |   |
| İF-B12                             | Database Management Systems                                                        | 7 |
| İF-B16                             | Human Computer Interface                                                           | 7 |
| İF-B17                             | Computer Networks                                                                  | 8 |
| ATMF-BO7                           | 1. Information and Communication Systems<br>2. Mathematical Logical Problems       | 4 |
| ATMF-BO8                           | 1. Fundamentals of Robotics<br>2. Electrical Engineering                           | 4 |
| ATMF-BO9                           | 1. Web Programming<br>2. Computer Systems Design                                   | 4 |
| 6 <sup>th</sup> semester (26 ECTS) |                                                                                    |   |
| İF-B15                             | Information Security                                                               | 6 |
| İF-B19                             | Web Systems and Technologies                                                       | 7 |

|                                    |                                                                                                                                                                     |    |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| İF-B20                             | IT Project Management                                                                                                                                               | 5  |
| ATMF-B10                           | 1. Distributed Data Systems<br>2. Intelligent Technologies for Decision-Making                                                                                      | 3  |
| ATMF-B11                           | 1. Metrology and Certification<br>2. Laser and Its Application<br>3. Social Physics                                                                                 | 5  |
| 7 <sup>th</sup> semester (30 ECTS) |                                                                                                                                                                     |    |
| ÜFS-B05                            | 1. Information Technology (Specialization)<br>2. Information Management<br>3. Political Science<br>4. Fundamentals of Entrepreneurship and Introduction to Business | 3  |
| İF-BO9                             | Modern Programming Languages                                                                                                                                        | 6  |
| İF-B18                             | Artificial Intelligence                                                                                                                                             | 6  |
| ATMF-B12                           | 1. Computer Modeling<br>2. Theory of Automata                                                                                                                       | 7  |
| ATMF-B13                           | 1. Modern Web Programming Tools<br>2. Cryptographic Algorithms in Computer Systems                                                                                  | 4  |
| ATMF-B14                           | 1. Internet Technology<br>2. Structured Programming                                                                                                                 | 4  |
| 8 <sup>th</sup> semester (30 ECTS) |                                                                                                                                                                     |    |
|                                    | Internship                                                                                                                                                          | 30 |

The curriculum for part-time study is presented below.

|                                    |                                                               |              |
|------------------------------------|---------------------------------------------------------------|--------------|
| 1 <sup>st</sup> semester (24 ECTS) |                                                               | ECTS Credits |
| ÜF – B03                           | Business and Academic Communication in Azerbaijani            | 4            |
| ÜF-B02.01                          | Business and Academic Communication in a Foreign Language - 1 | 7            |
| İF-BO6                             | Physics                                                       | 5            |

|                                    |                                                                                                                                                                                       |   |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| İF-BO7                             | Fundamentals of Information Technologies                                                                                                                                              | 8 |
| 2 <sup>nd</sup> semester (24 ECTS) |                                                                                                                                                                                       |   |
| ÜF-B01                             | History of Azerbaijan                                                                                                                                                                 | 5 |
| ÜF-B02.02                          | Business and Academic Communication in a Foreign Language - 2                                                                                                                         | 8 |
| İF-BO1                             | Linear Algebra and Analytic Geometry                                                                                                                                                  | 3 |
| İF-B10                             | Computer Architecture                                                                                                                                                                 | 8 |
| 3 <sup>rd</sup> semester (24 ECTS) |                                                                                                                                                                                       |   |
| ÜFS-B04                            | 1. Philosophy<br>2. Introduction to Multiculturalism<br>3. Sociology<br>4. Constitution of the Republic of Azerbaijan and Fundamentals of Law<br>5. Logic<br>6. Ethics and Aesthetics | 3 |
| İF-BO2                             | Calculus                                                                                                                                                                              | 7 |
| İF-BO5                             | Probability Theory and Mathematical Statistics                                                                                                                                        | 3 |
| İF-B21                             | Civil Defense                                                                                                                                                                         | 3 |
| ATMF-BO1                           | 1. Fundamentals of Circuit Technology<br>2. Systems Analysis                                                                                                                          | 4 |
| ATMF-BO2                           | 1. Computer Diagnostics<br>2. Decision Support Systems                                                                                                                                | 4 |
| 4 <sup>th</sup> semester (24 ECTS) |                                                                                                                                                                                       |   |
| İF-BO8                             | Fundamentals of Programming                                                                                                                                                           | 6 |
| İF-B13                             | Operating Systems                                                                                                                                                                     | 6 |
| İF-B14                             | Multimedia Technology                                                                                                                                                                 | 6 |
| İF-B18                             | Artificial Intelligence                                                                                                                                                               | 6 |
| 5 <sup>th</sup> semester (24 ECTS) |                                                                                                                                                                                       |   |
| İF-BO3                             | Differential Equations                                                                                                                                                                | 3 |

|                                    |                                                                                                                                                                     |   |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| İF-BO4                             | Discrete Mathematics                                                                                                                                                | 3 |
| İF-B11                             | Data Structure and Algorithms                                                                                                                                       | 7 |
| ATMF-BO5                           | 1. Algorithmization and Programming<br>2. System Simulation                                                                                                         | 4 |
| ATMF-BO6                           | 1. Methods of Ensuring Cybersecurity<br>2. Communication Channels                                                                                                   | 3 |
| ATMF-BO7                           | 1. Information and Communication Systems<br>2. Mathematical Logical Problems                                                                                        | 4 |
| 6 <sup>th</sup> semester (24 ECTS) |                                                                                                                                                                     |   |
| İF-B12                             | Database System                                                                                                                                                     | 7 |
| İF-B17                             | Computer Networks                                                                                                                                                   | 8 |
| ATMF-BO4                           | 1. Programming Technologies<br>2. Research Software Package                                                                                                         | 5 |
| ATMF-B14                           | 1. Internet Technology<br>2. Structured Programming                                                                                                                 | 4 |
| 7 <sup>th</sup> semester (24 ECTS) |                                                                                                                                                                     |   |
| İF-B15                             | Information Security                                                                                                                                                | 6 |
| İF-B16                             | Human Computer Interface                                                                                                                                            | 7 |
| İF-B19                             | Web Systems and Technologies                                                                                                                                        | 7 |
| ATMF-BO9                           | 1. Web Programming<br>2. Computer Systems Design                                                                                                                    | 4 |
| 8 <sup>th</sup> semester (24 ECTS) |                                                                                                                                                                     |   |
| ÜFS-B05                            | 1. Information Technology (Specialization)<br>2. Information Management<br>3. Political Science<br>4. Fundamentals of Entrepreneurship and Introduction to Business | 3 |
| İF-BO9                             | Modern Programming Languages                                                                                                                                        | 6 |

|                                     |                                                                                     |    |
|-------------------------------------|-------------------------------------------------------------------------------------|----|
| ATMF-B10                            | 1. Distributed Data Systems<br>2. Intelligent Technologies for Decision-Making      | 3  |
| ATMF-B11                            | 1. Metrology and Certification<br>2. Laser and its Application<br>3. Social Physics | 5  |
| ATMF-B12                            | 1. Computer Modeling<br>2. Theory of Automata                                       | 7  |
| 9 <sup>th</sup> semester (18 ECTS)  |                                                                                     |    |
| İF-B20                              | IT Project Management                                                               | 5  |
| ATMF-BO3                            | 1. Digital Cartography and Geographic Information Systems<br>2. Cloud Technologies  | 5  |
| ATMF-BO8                            | 1. Fundamentals of Robotics<br>2. Electrical Engineering                            | 4  |
| ATMF-B13                            | 1. Modern Web Programming Tools<br>2. Cryptographic Algorithms in Computer Systems  | 4  |
| 10 <sup>th</sup> semester (30 ECTS) |                                                                                     |    |
|                                     | Internship                                                                          | 30 |

According to the Self-Assessment Report, the following **objectives** and **learning outcomes (intended qualifications profile)** shall be achieved by the Bachelor's degree programme Mechatronics and Robotics Engineering:

Learning outcomes in the specialty "Mechatronics and Robotics Engineering":

- ability to apply knowledge in mechanics, electronics and informatics necessary for development and operation of complex technical systems;
- ability to apply knowledge in kinematics, dynamics and control systems of mechatronic devices, as well as operation of information and measuring instruments and programming;
- ability to generate new approaches and solutions to improve automation of processes and control of various systems;
- ability to effectively use both domestic and international achievements in science and technology in the design, implementation and operation of automatic and mechatronic systems;
- ability to diagnose, analyze and troubleshoot automatic and mechatronic systems in order to increase their reliability and sustainability;
- ability to analyze and develop process diagrams of robotic manipulators and mechatronic systems, as well as organize their restoration and reconfiguration;
- ability to control technological processes in environments where robotic and mechatronic systems are used, as well as ensure safety of work with them, implementing labor protection and environmental standards;
- ability to effectively interact both individually and as part of a team to achieve goals;
- ability to participate in continuous training and professional growth with the aim of adapting to the rapid development of technologies through participation in additional courses, career guidance initiatives and extracurricular activities;
- ability to use foreign language skills to obtain the necessary scientific and technical information. The ability to use a foreign language to prepare presentations and in oral speech.

The following curriculum is presented:

| 1 <sup>st</sup> semester (30 ECTS) |                                                                                                                                                                                       | ECTS | Cre-<br>dits |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------|
| ÜF-B02.01                          | Business and Academic Communication in a Foreign Language - 1                                                                                                                         | 7    |              |
| ÜF – B03                           | Business and Academic Communication in Azerbaijani                                                                                                                                    | 4    |              |
| İF-BO1                             | Linear Algebra and Analytic Geometry                                                                                                                                                  | 4    |              |
| İF-BO4                             | Physics                                                                                                                                                                               | 5    |              |
| İF-BO7                             | Fundamentals of Programming                                                                                                                                                           | 7    |              |
| İF-B21                             | Civil Defense                                                                                                                                                                         | 3    |              |
| 2 <sup>nd</sup> semester (30 ECTS) |                                                                                                                                                                                       |      |              |
| ÜF-B01                             | History of Azerbaijan                                                                                                                                                                 | 5    |              |
| ÜF-B02.02                          | Business and Academic Communication in a Foreign Language - 2                                                                                                                         | 8    |              |
| İF-BO2                             | Calculus                                                                                                                                                                              | 8    |              |
| İF-BO6                             | Theoretical Mechanics                                                                                                                                                                 | 6    |              |
| ATMF-BO1                           | Specialized Foreign Language (English / German)                                                                                                                                       | 3    |              |
| 3 <sup>rd</sup> semester (30 ECTS) |                                                                                                                                                                                       |      |              |
| ÜFS-B04                            | 1. Philosophy<br>2. Introduction to Multiculturalism<br>3. Sociology<br>4. Constitution of the Republic of Azerbaijan and Fundamentals of Law<br>5. Logic<br>6. Ethics and Aesthetics | 3    |              |
| İF-BO3                             | Applied Mathematics                                                                                                                                                                   | 4    |              |
| İF-BO5                             | Fundamentals of Mechatronics and Robotics                                                                                                                                             | 6    |              |
| İF-BO8                             | Theory of Machines and Mechanisms                                                                                                                                                     | 6    |              |
| ATMF-BO2                           | 1. Descriptive Geometry and Engineering Graphics<br>2. Engineering Graphics and Design                                                                                                | 5    |              |

|                                    |                                                                                                                                 |   |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---|
| ATMF-BO3                           | 1. Electrical Engineering<br>2. Laser and Its Application<br>3. Nanotechnology                                                  | 6 |
| 4 <sup>th</sup> semester (30 ECTS) |                                                                                                                                 |   |
| İF-BO9                             | Data Structure and Algorithms                                                                                                   | 7 |
| İF-B11                             | Mechatronic and Robotic Systems Design                                                                                          | 8 |
| İF-B12                             | Electronics                                                                                                                     | 6 |
| ATMF-BO4                           | 1. Embedded Microprocessors<br>2. Microprocessors and Microcontrollers<br>3. Basics of Circuitry                                | 5 |
| ATMF-BO5                           | 1. Engineering Mathematics<br>2. Mathematical Logical Problems<br>3. System Analysis                                            | 4 |
| 5 <sup>th</sup> semester (30 ECTS) |                                                                                                                                 |   |
| İF-B10                             | Database System                                                                                                                 | 7 |
| İF-B13                             | Robotics Control                                                                                                                | 6 |
| İF-B18                             | Computer Graphics                                                                                                               | 5 |
| ATMF-BO6                           | 1. Materials and Processes<br>2. Materials Science<br>3. Automated Design Systems for Devices                                   | 4 |
| ATMF-BO7                           | 1. Social Engineering<br>2. Industrial devices<br>3. Smart systems                                                              | 4 |
| ATMF-BO8                           | 1. Physical Principles of Obtaining Information, Modern Sensors and Converters<br>2. Electromagnetism<br>3. Digital Electronics | 4 |

|                                    |                                                                                                                                                                   |    |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 6 <sup>th</sup> semester (30 ECTS) |                                                                                                                                                                   |    |
| İF-B14                             | Modeling and Simulation of Dynamic Systems                                                                                                                        | 6  |
| İF-B16                             | Digital Signal and Image Processing                                                                                                                               | 7  |
| İF-B17                             | Sensors and Actuators                                                                                                                                             | 7  |
| ATMF -BO9                          | 1. Optical Information Systems<br>2. Mechanics of Manipulator Mechanisms<br>3. Mechanical Engineering                                                             | 5  |
| ATMF-B10                           | 1. Modern Programming languages<br>2. IoT Technologies<br>3. Cloud Technologies                                                                                   | 5  |
| 7 <sup>th</sup> semester (30 ECTS) |                                                                                                                                                                   |    |
| ÜFS-B05                            | 1. Information technology (by specialty)<br>2. Information management<br>3. Political science<br>4. Fundamentals of entrepreneurship and introduction to business | 3  |
| İF-B15                             | Theory of Automatic Control                                                                                                                                       | 6  |
| İF-B19                             | Flexible Manufacturing Systems                                                                                                                                    | 6  |
| ATMF-B11                           | 1. Metrology, Standardization and Certification<br>2. Quality Control and Metrology<br>3. Measuring Technologies                                                  | 5  |
| ATMF-B12                           | 1. Computerized Biomedical Devices<br>2. Basics of Device Technologies                                                                                            | 5  |
| ATMF-B13                           | 1. Biomedical Devices, Apparatus, Systems and Complexes<br>2. Technical Methods of Biomedical Diagnostics                                                         | 5  |
| 8 <sup>th</sup> semester (30 ECTS) |                                                                                                                                                                   |    |
|                                    | Internship                                                                                                                                                        | 30 |